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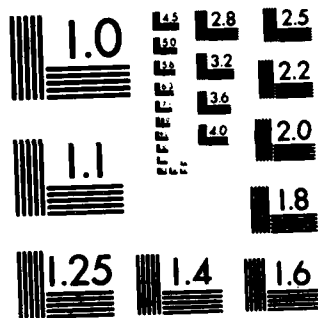
DEPARTMENT OF DEFENSE REPORT ON ALLIED CONTRIBUTIONS TO
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Department of Defense



Report on Allied Contributions to The Common Defense

A Report to United States Congress

by Caspar W. Weinberger

Secretary of Defense

MARCH 1966

REPORT ON ALLIED CONTRIBUTIONS
TO THE COMMON DEFENSE

A REPORT TO THE US CONGRESS

MARCH 1986

TO THE CONGRESS OF THE UNITED STATES

I am pleased to submit this report on Allied Contributions to the Common Defense. This is the sixth year the Department has submitted such a Report, as now required by the provisions of Section 1004, PL 98-525, Department of Defense Authorization Act, 1985. In addition, this year's Report responds to a request for information contained in Section 812, PL 99-93, Department of State Authorization Act, 1986.

I appreciate the continued interest of the Congress in the broad question of the sharing of the common defense burden among the United States, its NATO Allies, and Japan. The Department fully shares that interest. We recognize, as does the Congress, that in the final analysis Alliances will endure only if the burdens and benefits of the enterprise are equitably shared--and perceived to be so--by the participants.

The discipline of preparing this Report to the Congress annually has helped us refine our understanding of this complex question. A large number of varied criteria have been developed; the principal ones are described and used in this Report. As will be seen, each has its relevance to the issue at hand, but none is adequate alone to define a nation's "fair share" of the overall burden. Nevertheless, a careful review of nations' performance against all the criteria considered does yield a number of pertinent findings.

While by certain measures--particularly the share of gross domestic product (GDP) devoted to defense--the United States is doing distinctly more than almost all of its Allies, by some other measures the Allies do better or at least as well as the US. Moreover, some Allies make substantial contributions that do not find their way into the table of defense expenditures using the NATO definition. Thus, for the Federal Republic of Germany, important examples include the Berlin expenditures and the loss of rents and tax revenues caused by the unusually large amount of real estate dedicated to defense purposes. Then there are intangibles and other political factors that cannot be reduced to a numerical ratio. Examples of what might be called "political burdensharing" include the conscription system maintained by most Allies and the maneuver damage, noise, and other disruptions caused by the stationing of large numbers of foreign troops in an Allied nation's territory. Finally, one must note that there are substantial variations in performance among individual Allies; while some are doing very well by all or most of the criteria we use, others are doing plainly less than they should. One must, therefore, use care in

dealing with weighted averages to categorize the performance of our NATO Allies, or our NATO Allies and Japan, as a single group.

In my judgment, the detailed information and findings of the Report indicate clearly that our Allies are making a very substantial contribution to the common defense--much more than they are usually given credit for. As a consequence, I strongly believe that concerns about the relative contributions of our Allies need not and should not detract from the paramount fact that we must all do more to ensure an adequate balance of forces vis-a-vis the Warsaw Pact.

In closing, let me emphasize that we are not yet satisfied with our ability to judge our respective contributions to the common defense. In particular, we are working vigorously to develop and refine our means of measuring objective performance and military capabilities. Good progress has already been made in this regard, as will be seen from this Report and other material that will be submitted in response to the Cohen Amendment. But we hope to move still further toward the day when the contributions to the common security can be measured much more in terms of "output" than of "input." In short, we will continue to strive to give the Congress--and ourselves--the best possible tools for analysis and judgments on this complex and important subject.

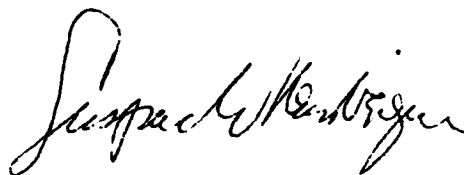


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I. INTRODUCTION AND OVERVIEW

PURPOSE

This report responds to Congress' interest in the extent to which our principal allies are contributing their fair share of the effort to provide for our common defense. It analyzes various burdensharing indices and factors for the United States, our NATO allies and Japan, offers some conclusions as to recent and current performance, and describes what is being done to encourage the allies to do more.

WHAT IS BURDENSARING?

Our defense arrangements with members of NATO and with Japan rest on formal commitments, freely made by sovereign nations, to contribute by collective efforts to our common security. Alliances, like other agreements, remain healthy so long as they respond to shared national interests. They remain acceptable to members so long as risks and responsibilities are -- and are perceived as being -- equitably shared. The contributions of partners include both material (quantifiable) factors as well as intangible (e.g., political) factors, as when governments persevere in policies serving overall security interests in the face of competition domestic and international pressures.

RECENT DEVELOPMENTS

We are gratified to report some encouraging recent developments pertaining to allied conventional defense efforts. At the December 1984 Ministerial meeting, Defense Ministers made four positive decisions that will have a significant impact on future allied defense capability. We are now starting to see significant progress toward achieving results from these initiatives. In September 1985 the Government of Japan adopted a five-year defense program which, if fully carried out, will greatly increase Japan's capability to meet its defense goals, including defense of searanes to 1000 miles. The budget approved by the Cabinet in December was adequate to fund most major items for the program's first year.

Infrastructure Program. NATO Ministers agreed on a significantly increased funding level for the Infrastructure program, which provides facilities for the collective needs of Alliance forces. The level for the six-year period 1985-1990 will be 3.0 Billion Infrastructure Accounting Units (BIAU) (approximately \$8.42 billion), which is more than double the funding agreed to in the previous five-year period. The new program provides a substantial improvement for US reinforcing forces and increases the number of hardened aircraft shelters. Planning is now well advanced to increase the pace at which NATO can complete infrastructure projects and roughly 90% of the budget will be spent on projects related to Conventional Defense Improvements.

Sustainability. Responding to Secretary Weinberger's December 1983 initiative, the NATO Ministers committed their nations to expanding existing plans for the procurement of specific critical munitions and to increas-

ing their efforts to meet the force goals that call for augmented war reserve stocks of ammunition. The 1985 fall defense review showed that most nations, especially in the Central Region, planned more rapid progress toward achieving the 30-day objective in the selected high priority items and that there were improvements in plans for other ammunition items. Further, at the December 1985 Defense Planning Committee (DPC) meeting, Ministers agreed to support cooperative procurement approach for the purpose of building up war reserve stocks in the most economical way. The 1986-1990 Japanese defense program brings Ground Self-Defense Force sustainability to one month and Maritime and Air Self-Defense Force levels up to a similar or greater level.

Conventional Defense. The NATO Ministers, at the December 1984 meeting also reaffirmed the need for continuing improvement of NATO's conventional defense capabilities (CDI). The first reactions to CDI have been encouraging. Progress has already been made in addressing the key deficiencies, and NATO has affirmed its intention to place special emphasis on these areas in national planning. Nations have made steady progress in modernization through the introduction of modern, more capable systems. As a result of this process the ratio of the new to old equipment in the NATO armed forces is improving markedly and will do so even more substantially in the future.

Out-of-Area Force Goals. The supplemental set of 1984 force goals envisaging "compensatory" NATO measures to offset the impact of possible US force deployments "out-of-area" called for feasibility studies of air and land improvements in areas where ACE capabilities would be significantly reduced by US deployments to Southwest Asia. These studies are now complete, and the results are being incorporated into the 1987-92 Force Goals.

THE QUESTION OF FAIR SHARE

As will be discussed in the next section, there is no single, universally accepted formula for calculating each country's "fair share." Therefore, what we have attempted to do in this report is (1) portray the efforts of the NATO nations and Japan on the basis of a variety of key quantitative indicators, (2) discuss the purpose and utility of each indicator as well as important caveats and limitations, (3) highlight important non-quantifiable factors that must be considered to round out the picture, and (4) provide an overall assessment based on all of these factors.

POLITICAL ASPECTS

Any assessment of burdensharing must include an examination of the political environment in which allied governments operate. We continue to share with our allies a common perception of the serious threat that the Soviet Union and its military buildup poses to Alliance security. However, there are understandable differences among the allies as to the most appropriate way to meet the Soviet challenge. These differences arise not only by virtue of history and culture, but also because of geography.

Because their homeland is the potential battlefield, the Europeans' sense of the risks of conflict is more immediate than our own or the Japanese, and the public desire for an easing of East-West tensions is more wide-spread. Families divided by the East-West border have different perceptions and different priorities for East-West rapprochement. And Europe generally tends to attach greater importance to expanding East-West trade.

With these factors in mind, we must regard the leadership that European governments have provided and their successes in support of Alliance defense policies as very real contributions to burdensharing. Differences in perspective that sometimes lead the allies to take independent positions have not marred a record of cooperation that is, on the whole, remarkably good (and surely the envy of any other Alliance system).

An important ongoing success in political burdensharing is the unity and resolve the European allies have shown in staying on course for the deployment of longer-range intermediate-range nuclear forces (LRINF) in the absence of an arms control agreement obviating the need for such deployment. Soviet diplomatic pressures, a massive Soviet effort to influence European public opinion, and even openly enunciated threats have not derailed the NATO "two-track" decision of December 1979. The public outcry that greeted the first deliveries at the end of 1983 has only partly subsided, and the political risks faced by the European leaders most directly concerned remains substantial. INF remains a marked demonstration of political courage.

Moreover, in the seventh year of the Soviet occupation of Afghanistan, it is well to recall that our allies took steps to impose political and economic costs on the Soviet Union for its invasion there and that European and Japanese leaders greeted its sixth anniversary with renewed condemnations. Our allies have also taken firm measures in response to Soviet support for repression in Poland. The allies firmly supported the President in his talks with General Secretary Gorbachev.

European assistance in the Middle East (mine clearing the Red Sea, and providing peacekeeping forces, for instance) and elsewhere and Japan's increasing economic development assistance, bespeaks an increasing awareness that our defense efforts must be complementary even outside the Atlantic area in order to maximize our common security.

QUANTITATIVE MEASURES

By some numerical comparisons the United States is clearly doing more than its allies. For example, the United States is expending between 6% and 7% of its Gross Domestic Product on defense while its NATO allies are spending about 3 1/2% on a weighted average basis, and Japan is spending about 1%. Also, the United States is increasing its real defense expenditures at a higher rate than most of its allies. There are, however, a number of factors that tend to moderate these disparities. Some of our allies would say that the disparity between the US share of GDP for defense and the non-US NATO weighted average can be attributed, in part,

to our role as a nuclear superpower and our worldwide interests and responsibilities. It is also important to recognize that the relatively high real growth in US defense spending in recent years reflects, in part, an effort to compensate for the real decreases and low growth rates the United States experienced during most of the 1970s, when our allies were achieving steady real increases. Most NATO countries (the exceptions are the United Kingdom, Canada and Luxembourg) rely on conscript manpower for military personnel, resulting in many instances in lower manpower costs and a larger trained reserve manpower pool than they would have had with an all-volunteer force. Moreover, some relevant allied economic burdens are not included in the NATO definition of defense expenditures. These include items such as proportionally greater developmental assistance and, for the Federal Republic of Germany, the Berlin expenditures and the loss of relatively greater rents and tax revenue due to the large amount of real estate dedicated to defense purposes.

Moreover, for a number of important quantitative defense measures our NATO allies and Japan compare well with the United States. For example, our NATO allies field slightly more active duty military manpower as a percent of population than the United States and substantially more armored division equivalents (ADE) and tactical combat air force aircraft in relation to their economic strength. Japan has twice as many destroyers and three times more antisubmarine aircraft as the US Seventh Fleet and as many fighter aircraft defending its territory as the US has defending the continental United States.

Based on a review of all factors, one may conclude that the non-US NATO allies and Japan, as a group, are making a substantial contribution to the common defense. They are certainly doing much better than is commonly recognized. Important differences emerge, however, when the results for individual countries are compared. Some nations appear to be doing at least their fair share; other NATO nations and Japan appear, on the whole, to be making financial contributions below their fair share.

Because of the many judgments involved in taking account of the intangibles and weighing the individual indicators, there may be honest differences of opinion on how best to characterize the burdensharing efforts of our allies, both in the aggregate and individually. We do not believe, however, that there are any major differences between the administration and the US Congress on the more important question of whether our allies should do more. Increased efforts on the part of all member nations are needed, not because of burdensharing statistics but because of military assessments of the need for required improvements in NATO's capabilities. We have been working on many fronts to encourage our allies to improve their defense capabilities. The results of recent OPC Ministerial meetings, discussed at the start of this chapter, provide strong evidence that progress is being achieved.

We believe that we will continue to make progress in obtaining important Alliance capability improvements as long as we focus attention on the objective need for such improvements. Achieving US security goals would cost much more if the NATO Alliance and our partnership with Japan were permitted to become weak as a result of divisive arguments over defense

burdensharing. Unilateral pronouncements by the United States on the extent to which our allies are or are not sharing the burden are not an effective formula for encouraging improved allied efforts. Our positive leadership has always been, and will remain, a better means to ensure the adequacy of our common defense effort.

II. COMPARISON OF SELECTED INDICATORS OF BURDENSARING

Defense analysts do not have a single, universally accepted formula for calculating each country's "fair share" of the collective defense burden. Any such calculation would have to take account of, and weigh, the many disparate factors that together determine the level of a nation's defense effort. The task is more complicated than simply identifying which factors to count, and deciding how each should be weighed relative to the others. While many components of defense effort are measurable, others are much more subjective in nature and do not readily lend themselves to quantification. Consequently, even the most sophisticated techniques in our analytical tool kit today cannot provide a definitive solution to the fair share problem.

In order to be responsive to the spirit of the Congress' request for a comparison of "fair and equitable shares . . . that should be borne" and "actual defense efforts . . . that currently exist," this report adopts an approach that entails displaying selected indicators side by side. The overall assessment takes into account these measures as well as other nonquantifiable factors discussed elsewhere in the text.

Broadly speaking, the measures of performance used in this analysis can be grouped into three general categories:

- o Indicators of nations' ability to contribute (Table II-1);
- o Indicators of the amounts that actually have been contributed (Table II-2); and
- o Indicators that measure nations' contributions as a function of their ability to contribute (Table II-3).

To simplify comparisons, most of the indicators considered in Tables II-1 and II-2 measure a country's relative performance in one of two ways: (1) as a share of the combined NATO/Japan total and (2) as a percentage of the value of the highest-ranking nation. The figures in Table II-3 are expressed as ratios, calculated by dividing the "contribution" shares by the "ability to contribute" shares. Simply stated, a ratio of around 1.0 indicates that a nation's contribution and its ability to contribute are roughly in balance. A ratio above 1.0 indicates that a country is contributing beyond its "fair share" for the particular measure in question, whereas a ratio below 1.0 implies that a country's contribution is not commensurate with its ability to contribute.^{1/} This approach enables us to consider and compare a variety of disparate measures using a common, easily comprehensible scale.

^{1/} Since the ratio for all nations combined is 1.0, a country value of 1.0 means that the nation's contribution is consistent with the NATO and Japan average. By the same token, a ratio greater than 1.0 means that the country is above the average, whereas a ratio less than 1.0 means that it is below the average.

TABLE II-1

A. Selected Indicators of Ability to Contribute
(Including Spain)

Rank	(A1) GDP Share	(A2) Population Share	(A3) Per Capita GDP (% of Highest Nation)	(A4) Prosperity Index Share
1	US 47.92%	US 31.45%	US 100.0%	US 61.19%
2	JA 15.38%	JA 15.95%	CA 86.1%	JA 12.42%
3	GE 8.08%	GE 8.13%	NO 86.1%	GE 6.74%
4	FR 6.45%	IT 7.57%	DE 69.6%	CA 4.82%
5	UK 5.60%	UK 7.51%	GE 65.3%	FR 4.78%
6	IT 4.59%	FR 7.30%	JA 63.3%	UK 3.50%
7	CA 4.38%	TU 6.47%	FR 58.0%	IT 2.34%
8	SP 2.12%	SP 5.10%	LU 57.5%	NE 1.15%
9	NE 1.62%	CA 3.34%	NE 55.6%	NO 0.79%
10	RE 1.00%	NE 1.92%	BE 50.3%	SP 0.74%
11	NO 0.72%	PO 1.35%	UK 49.0%	BE 0.64%
12	DE 0.72%	GR 1.32%	IT 39.8%	DE 0.64%
13	TU 0.66%	RE 1.31%	SP 27.3%	GR 0.12%
14	GR 0.44%	DE 0.68%	GR 22.0%	TU 0.06%
15	PO 0.25%	NO 0.55%	PO 12.4%	PO 0.04%
16	LU 0.04%	LU 0.05%	TU 6.7%	LU 0.03%
Non US NATO	36.70%	52.60%	45.8%	26.39%
Non US NATO + Japan	52.08%	68.55%	49.9%	38.81%
Total NATO	84.62%	84.05%	66.1%	87.58%
Total NATO + Japan	100.00%	100.00%	65.6%	100.00%

TABLE II-2

B. Selected Indicators of Contribution
(Including Spain)

Rank	(B1) Defense Spending Share	(B2) Defense Spending (% Change 71 vs 84)	(B3) Active Defense Manpower Share	(B4) Active Defense Manpower (% Change 71 vs 84)	(B5) Active & Reserve Defense Manpower Share	(B6) Ground Forces ADES Share	(B7) Tac Air Combat Acft Share
1	US 67.49%	GR 130.61%	US 39.98%	TU 34.19%	US 37.26%	US 40.85%	US 41.30%
2	UK 6.82%	JA 119.91%	TU 10.53%	LU 16.67%	GE 10.90%	TU 10.71%	FR 9.29%
3	FR 5.89%	TU 106.47%	FR 8.62%	GR 14.74%	FR 9.06%	GE 10.25%	UK 9.21%
4	GE 5.87%	LU 96.02%	GE 7.99%	NO 6.84%	TU 8.97%	FR 5.84%	GE 8.73%
5	JA 3.41%	BE 50.94%	IT 6.82%	GE 2.55%	SP 6.64%	GR 5.78%	IT 5.86%
6	IT 2.73%	FR 44.65%	SP 6.60%	JA 2.78%	IT 6.41%	UK 4.74%	TU 4.44%
7	CA 2.20%	CA 33.27%	UK 6.50%	FR 1.36%	UK 5.51%	IT 4.36%	JA 4.12%
8	SP 1.36%	NO 27.96%	JA 3.19%	SP 0.00%	GR 3.76%	SP 4.07%	GR 4.01%
9	NE 1.16%	GE 27.48%	GR 2.80%	RE -0.08%	NE 2.32%	JA 3.70%	BE 2.51%
10	BE 0.71%	IT 24.71%	NE 1.57%	CA -4.86%	JA 2.26%	NE 3.16%	CA 2.39%
11	GR 0.70%	NE 21.40%	CA 1.47%	IT -5.84%	BE 1.86%	DE 1.66%	NE 2.29%
12	TU 0.64%	UK 16.09%	BE 1.38%	NE -8.01%	NO 1.83%	BE 1.51%	SP 1.87%
13	NO 0.45%	US 11.71%	PO 1.34%	US -13.48%	PO 1.26%	NO 1.44%	NO 1.47%
14	DE 0.37%	DE 4.19%	NO 0.61%	UK -23.95%	CA 1.11%	CA 1.09%	DE 1.38%
15	PO 0.18%	SP 0.00%	DE 0.49%	DE -24.63%	DE 0.84%	PO 0.84%	PO 1.13%
16	LU 0.01%	PO -28.03%	LU 0.02%	PO -55.19%	LU 0.01%	LU 0.01%	LU 0.00%
Non-US NATO	29.10%	29.63% *	56.82%	-2.20% *	60.48%	55.45%	54.58%
Non-US NATO + Japan	32.51%	35.72% *	60.02%	-1.95% *	62.74%	59.15%	58.70%
Total NATO	96.59%	16.40% *	96.81%	-7.55% *	97.74%	96.30%	95.88%
Total NATO + Japan	100.00%	18.32% *	100.00%	-7.24% *	100.00%	100.00%	100.00%

*Excludes Spain

TABLE II-3

C. Selected Indicators Comparing Contribution With Ability to Contribute
(Including Spain)

	(C1)	(C2)	(C3)	(C4)	(C5)	(C6)
	Ratio: Def. Spend. Share/GDP Share (B1 ÷ A1)	Ratio: Def. Spend. Share/ Prosperity Index Share (B1 ÷ A4)	Ratio: Active Def. Manpower/ Pop. Share (B3 ÷ A2)	Ratio: Active & Res. Def. Manpower/ Pop. Share (B5 ÷ A2)	Ratio: ADE Share/ Prosperity Index Share (B6 ÷ A4)	Ratio: Acft Share/ Prosperity Index Share (B7 ÷ A4)
Rank						
1	GR 1.59	TU 11.42	GR 2.13	NO 3.32	TU 191.41	TU 79.39
2	US 1.41	GR 5.68	TU 1.63	GR 2.85	GR 46.63	GR 32.40
3	UK 1.22	PO 4.56	SP 1.29	BE 1.42	PO 20.85	PO 28.11
4	TU 0.97	UK 1.95	US 1.27	TU 1.39	SP 5.50	BE 3.90
5	FR 0.91	SP 1.84	FR 1.18	GE 1.34	NE 2.74	UK 2.63
6	GE 0.73	FR 1.23	NO 1.10	SP 1.30	DE 2.59	SP 2.53
7	PO 0.72	IT 1.17	BE 1.05	FR 1.24	RE 2.34	IT 2.51
8	NE 0.71	BE 1.11	PO 0.99	DE 1.24	IT 1.87	DE 2.15
9	BE 0.71	US 1.10	GE 0.98	NE 1.21	NO 1.81	NE 1.99
10	SP 0.64	NE 1.01	IT 0.90	US 1.18	GE 1.52	FR 1.94
11	NO 0.63	GE 0.87	UK 0.88	PO 0.93	UK 1.35	NO 1.85
12	IT 0.59	DE 0.57	NE 0.82	IT 0.85	FR 1.22	GE 1.30
13	DE 0.51	NO 0.57	DE 0.72	UK 0.73	US 0.67	US 0.67
14	CA 0.50	CA 0.46	CA 0.44	CA 0.33	JA 0.30	CA 0.50
15	LU 0.26	LU 0.36	LU 0.35	LU 0.22	LU 0.24	JA 0.33
16	JA 0.22	JA 0.27	JA 0.20	JA 0.14	CA 0.23	LU 0.00
Non-US NATO	0.79	1.10	1.08	1.15	2.10	2.07
Non-US NATO + Japan	0.62	0.84	0.88	0.92	1.52	1.51
Total NATO	1.14	1.10	1.15	1.16	1.10	1.09
Total NATO + Japan	1.00	1.00	1.00	1.00	1.00	1.00

TABLE II-3 (Cont'd)

C. Selected Indicators Comparing Contribution With Ability to Contribute
(Including Spain)

Rank	(C7)		(C8)	
	Ratio: ADE Share/ GDP Share (B6 ÷ A1)		Ratio: Acft Share/ GDP Share (B7 ÷ A1)	
1	TU 16.79		GR 9.10	
2	GR 13.09		TU 6.76	
3	PO 3.29		PO 4.44	
4	DE 2.70		BE 2.50	
5	NO 1.99		NO 2.03	
6	NE 1.95		DE 1.91	
7	SP 1.92		UK 1.64	
8	BE 1.50		FR 1.44	
9	GE 1.27		NE 1.41	
10	IT 0.95		IT 1.28	
11	FR 0.90		GE 1.08	
12	US 0.85		SP 0.88	
13	UK 0.85		US 0.86	
14	CA 0.25		CA 0.54	
15	JA 0.24		JA 0.27	
16	LU 0.17		LU 0.00	
Non-US NATO	1.51		1.49	
Non-US NATO + Japan	1.14		1.13	
Total NATO	1.14		1.13	
Total NATO + Japan	1.00		1.00	

The following section summarizes the major findings of the analysis. Subsequent sections describe the various indicators used to measure individual countries' performance and examine the results for each indicator. Appendix A elaborates on that discussion, presenting the detailed results for selected indicators.

As last year, data for Spain have been included in this report. Spain joined the NATO Alliance in 1982, but does not commit its forces to NATO's military commands. Consequently, unlike nations that are fully integrated into the Alliance's military structure, Spain does not submit a reply to NATO's annual Defense Planning Questionnaire, from which much of the historical data reported in this document were drawn. Since in some cases comparable data are not yet available for Spain, some of the charts do not include a Spanish contribution. Where Spain has been included, US estimates were used if Spanish or NATO figures were not available. (To aid in comparing this year's results with the findings of previous editions of the report, Appendix A provides two tables for each performance measure, one including figures for Spain and the other omitting Spain from the share calculations.)

MAJOR FINDINGS OF THE ANALYSIS

The broad conclusions reported below take into account (1) the ratios recorded in Table II-3, (2) the trend data shown in Table II-2 and discussed in other sections of this report, and (3) difficult-to-quantify and non-quantifiable factors (such as host nation support) discussed elsewhere in the document.

The US Effort. Based on the major quantifiable measures examined, the United States appears to be contributing somewhat more than its fair share of the NATO and Japan total. For example, the US defense/GDP (C1) and defense/prosperity index share (C2) ratios are 1.41 and 1.10, respectively. The ratios for active duty manpower/population (C3) and active and reserve manpower/population (C4) also exceed the 1.0 norm. Of all the indicators considered in Table II-3, only in division equivalents and aircraft do the US ratios (C5, C7 and C6, C8) drop below 1.0. When taking into account our historical role in NATO and the intangible benefits that accrue to the United States our allies might argue: (1) that we are getting full value for the extra effort we appear to be expending, and (2) that our leadership role obligates us to do more than simply achieve our statistically computed fair share.

Allied Efforts. The non-US NATO allies as a group appear to be shouldering roughly their fair share of the NATO and Japan defense burden. For example, the weighted-average ratio of their defense/prosperity index shares (C2) is 1.10, while their defense/GDP shares ratio (C1) is .79 and all of their remaining ratios exceed 1.0, some by a wide margin.

Important differences emerge, however, when the results for individual countries are compared. Some of the allies appear to be doing more than their statistically computed share. Other NATO nations seem statistically to be doing substantially less than their fair share.

Japan, the only non-NATO country considered in this analysis, ranks last or close to last on most of performance measures compared to ability to contribute surveyed, and thus, appears to be doing far less than its fair share. Japan recognizes this obligation and has the second highest percentage change in defense spending from 1971-1984. Moreover, Prime Minister Nakasone's Cabinets have authorized defense increase from 1983-1986 at approximately five percent annual real growth excess over almost all Government spending. The US is encouraging the Japanese to increase their contributions to defense even further.

DESCRIPTION OF BURDENSARING MEASURES IN TABLES II-1 AND II-2

The quantitative performance ratios used in the preceding discussions were derived from two major categories of data: indicators of ability to contribute and indicators of actual contributions. The following material briefly describes the major burdensaring indices associated with each category.

INDICATORS OF ABILITY TO CONTRIBUTE

The ability of nations to contribute to the collective defense effort (see Table II-1) was evaluated on the basis of four indices:

GDP Share (A1). Reflects the total value of all goods and services produced by a country and is widely used for comparing defense burdens among nations.

Population Share (A2). Provides an indication of the total amount of human resources available to each nation and, thus, is useful in examining defense manpower contributions.

Per Capita GDP (A3). GDP divided by population; a widely accepted measure of economic development and standard of living.

Prosperity Index Share (A4). This experimental indicator illustrates one approach for taking economic development and standard of living into account in assessing fair shares of the defense burden. Specifically, it adjusts GDP shares (A1) in proportion to each nation's economic development and standard of living as reflected by its position on the per capita GDP measure (A3). The index is based on the premise that the collective interest of the Free World is best served if the relatively more prosperous nations (in terms of per capita GDP) carry a proportionately larger share of the collective military burden, thereby allowing relatively less prosperous nations to concentrate their limited resources to a greater degree on basic domestic programs. The index is computed by multiplying GDP shares (A1) by per capita GDP (A3) and normalizing the resulting products so that they sum to 100 percent. (Table II-4 illustrates the steps in the computation.) The underlying principle is analogous to that of a graduated income tax. It is important to underscore the experimental and illustrative nature of this measure and to emphasize that this is one

TABLE II-4

Computation of Prosperity Index
(Including Spain)

	(1) GDP Share (A1)	(2) Per Capita GDP (A2) (% of Highest Nation)	(3) (1) x (2)	(4) Prosperity Index (A4) (% Allocation of Col (3))
Belgium	1.00%	50.3%	50.40	0.64%
Canada	4.38%	86.1%	377.42	4.82%
Denmark	0.72%	69.6%	50.15	0.64%
France	6.45%	58.0%	374.31	4.78%
Fed. Rep. Germany	8.08%	65.3%	527.63	6.74%
Greece	0.44%	22.0%	9.70	0.12%
Italy	4.59%	39.8%	182.88	2.34%
Luxembourg	0.04%	57.5%	2.45	0.03%
Netherlands	1.62%	55.6%	90.17	1.15%
Norway	0.72%	86.1%	62.12	0.79%
Portugal	0.25%	12.4%	3.15	0.04%
Spain	2.12%	27.3%	57.92	0.74%
Turkey	0.66%	6.7%	4.38	0.06%
United Kingdom	5.60%	49.0%	274.13	3.50%
United States	47.97%	100.0%	4792.31	61.19%
Japan	15.38%	63.3%	972.97	12.42%
Non US NATO	36.70%	45.8%	2066.82	26.39%
Non US NATO + Japan	52.08%	49.9%	3039.79	38.81%
Total NATO	84.62%	66.1%	6859.13	87.58%
Total NATO + Japan	100.00%	65.6%	7832.10	100.00%

of a variety of approaches or measures that might be used to address what is essentially a subjective question: how much more is it fair to expect from more prosperous countries than from less prosperous ones?

INDICATORS OF CONTRIBUTION

This analysis draws on seven major measures of contributions to defense (See table II-2).

Defense Spending Share (R1). The share figures recorded for the NATO countries (including the United States) are based on a definition agreed to by NATO of what is to be included in total defense spending. This ensures a much higher degree of comparability than could be achieved using any other available data. Although spending shares are probably the most comprehensive indicator of defense effort, it is important to recognize that they measure input, not output. Also, they do not fully reflect certain important outlays that contribute to a country's overall defense effort, (e.g., host nation support).

Percentage Change in Defense Spending, 1971 vs. 1984 (B2). Provides an indication of changes in real defense spending. Figures have been computed using constant 1984 prices and 1984 exchange rates.

Active Defense Manpower Share (B3). Reflects active-duty military and civilian manpower levels in peacetime. Including civilians in the calculation helps eliminate comparability problems stemming from differences in national policies on the use of civilians for military tasks.

Percentage Change in Active Defense Manpower Levels, 1971 vs. 1984 (R4). Provides an indication of changes in peacetime active-duty military and civilian manpower strengths.

Active and Reserve Defense Manpower Share (R5). Includes peacetime active-duty end strengths and civilian manpower levels plus an estimate of "committed reserves" (i.e., reservists with mobilization assignments).

Ground Forces Armored Division Equivalent (ADE) Share (R6). The ADE is an indicator of effectiveness of ground forces based on the quantity and quality of their major weapons. This static measure--which is widely used within DoD for ground forces comparisons--provides a more accurate picture of combat effectiveness than do simple counts of combat units and weapons. The measure does not, however, take into account such factors as ammunition availability, logistical support, training, communications, and morale.

Air Force Tactical Combat Aircraft Share (R7). Includes fighter/interceptor, attack, bomber, and tactical reconnaissance aircraft in air force inventories.

BURDENSARING MEASURES AND PERFORMANCE

This section provides a detailed comparison of US and allied efforts as measured by the major burdensaring indicators discussed above. The discussion treats each indicator individually, explaining its purpose and utility as well as noting important caveats and limitations. Relevant statistics are summarized in the accompanying charts. As noted earlier, indicators fall into three general categories: indicators of ability to contribute (e.g., gross domestic product); 1/ indicators of amount of contribution (e.g., total defense spending, total military and civilian manpower; 2/ and indicators that relate contributions and ability to contribute (e.g., percentage of GDP allocated to defense spending). 3/

In theory, there could be another category of indicators measuring benefits received. For the most part, these involve highly subjective judgments and are not easy to quantify. Since one of the major benefits of participating in a collective defense effort is successful deterrence of conflict and freedom from foreign domination, some would argue that the larger a nation's population (or the larger its GDP), the more that nation has to lose if the alliance defense effort is not successful. By that line of reasoning, many of the indicators of economic condition and strength would reflect benefits received. Others would argue, however, that successful deterrence and freedom from domination are intangibles best left unquantified.

In the final analysis, our primary goal must be a steady, coherent, and sustained growth of alliance defense capabilities pending the achievement of arms control agreements that would obviate this need. This does not mean that we do not believe the burdens of alliance membership should be distributed as widely and equitably as possible. It does, however, reflect a concern that we have focused too often solely on individual members' contributions to that objective, rather than on the capabilities and requirements of the alliance as a whole.

TOTAL DEFENSE SPENDING

This indicator measures defense spending by each nation, both in absolute terms and as a share of the NATO and Japan total (Charts II-5 and II-6). As noted in the previous section, the figures for the NATO nations reflect the types of expenditures defined by NATO as contributing to total defense spending. While this ensures a much higher degree of comparability (both for comparing trends among nations and for examining trends over time) than could be obtained using any other available data, some nations feel their defense efforts are understated by these criteria because they do not include certain expenditures of a unique nature.

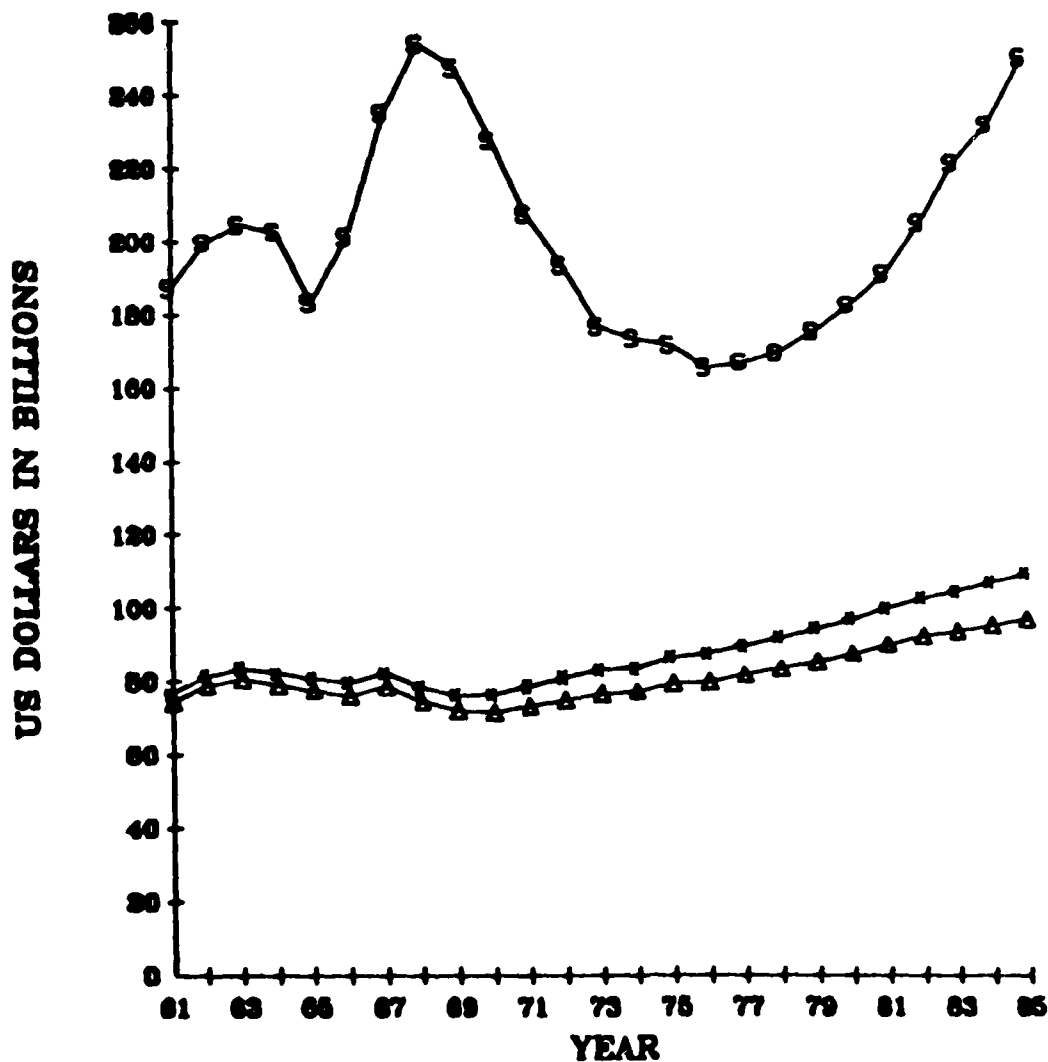
1/ All of these are addressed in Appendix A.

2/ One of these--defense spending by resource category -- is addressed in Appendix A.

3/ One of these -- per capita defense spending -- is addressed in Appendix A.

CHART II-5

TOTAL DEFENSE SPENDING (FISCAL YEAR)
US DOLLARS IN BILLIONS
(1984 CONSTANT DOLLARS - 1984 EXCHANGE RATES)



LEGEND

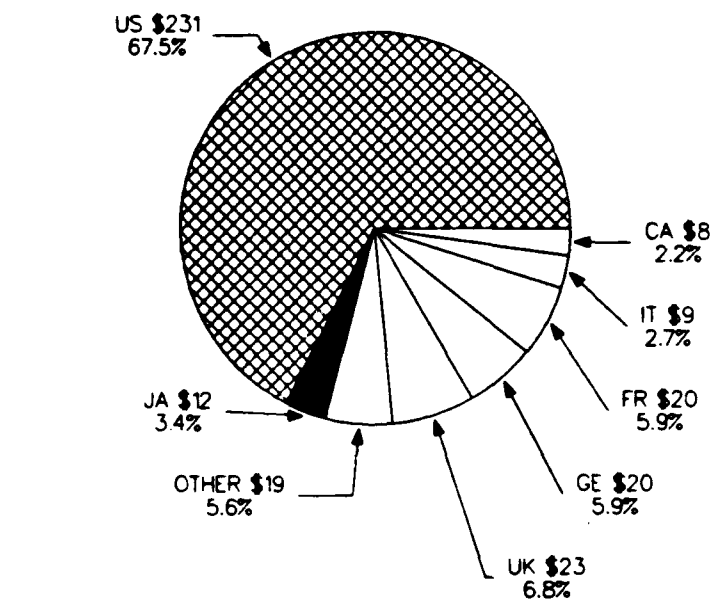
S UNITED STATES
 A NON US NATO
 * NON US NATO & JAPAN

FOOTNOTES

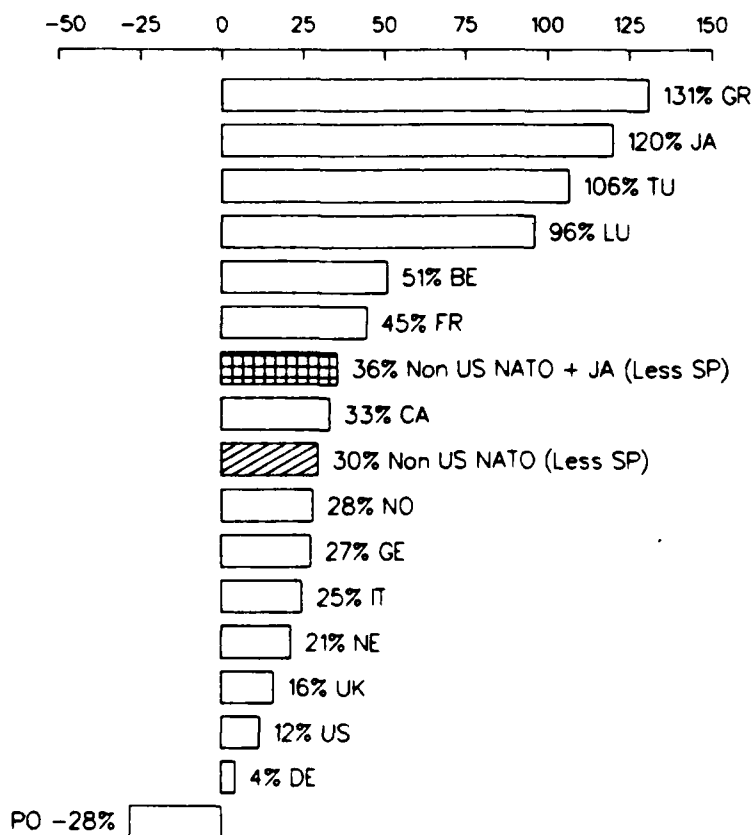
Based on NATO definition of defense spending. Excludes Spain

CHART II-6

TOTAL DEFENSE SPENDING (FY)
(1984 CONSTANT DOLLARS IN BILLIONS - 1984 EXCHANGE RATES)
1984
TOTAL NATO & JAPAN: \$343



% CHANGE IN TOTAL DEFENSE SPENDING (1971 VS 1984)



Germany, for example, feels that its economic assistance to Berlin and support for the Berlin garrisons, which are not considered "defense expenditures" under NATO's accounting rules, contribute significantly to the Alliance defense effort in the broadest sense of the word. If included, these expenditures would increase Germany's defense spending total for 1984 by around 25 percent.

Defense related costs, such as real estate provided for forward-deployed forces and some host nation support expenditures, also are not counted as defense spending under the NATO definition. The current market value of the real estate made available to allied forces stationed in Germany, for example, has been estimated at around \$16 billion.

Some European nations, especially Germany, incur additional expenses by hardening or building redundancy into civil projects with potential military applications. Examples include roads, pipelines, and civilian communication systems. Many of these expenditures cannot be reported under NATO's defense accounting criteria.

The value of civilian assets (e.g., trucks) that are designed for military use in time of war likewise cannot be counted as defense expenditures. Yet these assets contribute directly to NATO's and Japan's military capabilities and reduce the amount these nations and the United States might otherwise have to spend on defense. This is particularly the case for Germany, which has undertaken a significant program to register civilian assets that would be used by the Bundeswehr and allied forces in wartime.

It is also important to recognize that identical defense expenditures by two nations will not necessarily translate into identical amounts of military capability. Since a number of our allies are able to man their forces at a lower cost than we can, traditional spending comparisons (such as those displayed in the accompanying charts) may understate the size and value of allied forces vis-a-vis our own.

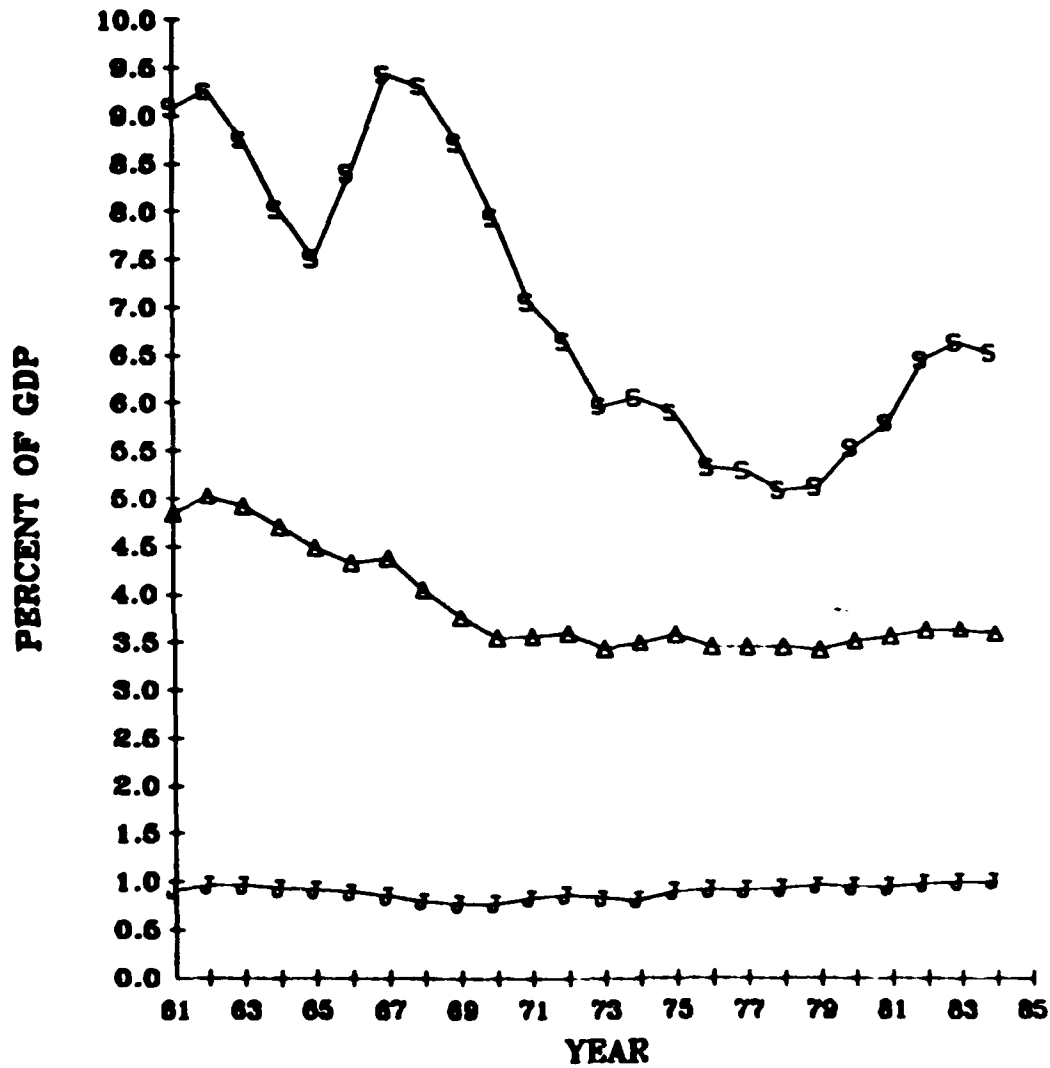
Together, the NATO nations and Japan spent some \$343 billion on defense in 1984. The United States supplied about \$231 billion, or 67.5 percent of that amount. As Chart II-5 shows, US defense spending in real terms declined during most of the 1970s, but toward the end of the decade, this pattern reversed. The net change in US and allied shares between 1971 and 1984 reflects a 30 percent real increase in the defense budgets of the non-US NATO members as a group, 120 percent real growth for Japan, and a real increase of 12 percent in US defense spending.

PERCENTAGE OF GROSS DOMESTIC PRODUCT (GDP) ALLOCATED TO DEFENSE

This is probably the most popular of all the indicators of defense burdensharing. Among its virtues are that it is easy to compute; it is based on data that usually are readily available; and it is easy to explain and understand, (Chart II-7).

CHART II-7

**TOTAL DEFENSE EXPENDITURES (CY)
AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT**



LEGEND

S UNITED STATES
Δ NON US NATO
J JAPAN

FOOTNOTES

Based on NATO definition of defense spending. Excludes Spain

When used as one of a variety of indicators, and with an understanding of some of its shortcomings, the GDP share indicator can provide valuable insights. Unfortunately, there is often a tendency to view it as the "be-all and end-all" and, thus, to rely on it to the exclusion of other measures. Another problem is the tendency of some users of this measure to automatically assume--explicitly or implicitly--that "equitable" burdensharing requires all nations to devote an equal share of GDP to defense. An opposing view frequently voiced within the Alliance is that it is more equitable, and in the collective interest of the Free World, for nations with the strongest economies to devote a proportionately larger share of their wealth to defense, thereby allowing weaker members to allocate proportionately more of their limited resources to basic domestic programs. This is analogous to the graduated income tax used by the United States and many other nations in apportioning domestic revenue burdens.

Finally, it is important to recognize that all of the factors discussed in the previous section that render total defense spending an imperfect indicator of a nation's defense effort also apply to defense spending as a share of GDP. That is, the measure does not take into account efforts that are not directly reflected in defense budgets.

Greece, with a 1984 percentage of 7.2, allocates the highest share of GDP to defense among all of the nations surveyed here. (Chart II-8) The US is second, with 6.5 ¹/₁₀ percent, while the United Kingdom's 5.3 percent share places it third, followed by Turkey (4.4 percent) and France (4.1 percent). All of the remaining nations have shares of 3.3 percent or less. The weighted average for the non-US nations combined is 3.5 percent if only the NATO nations are considered and 2.8 percent if Japan is included in the calculation.

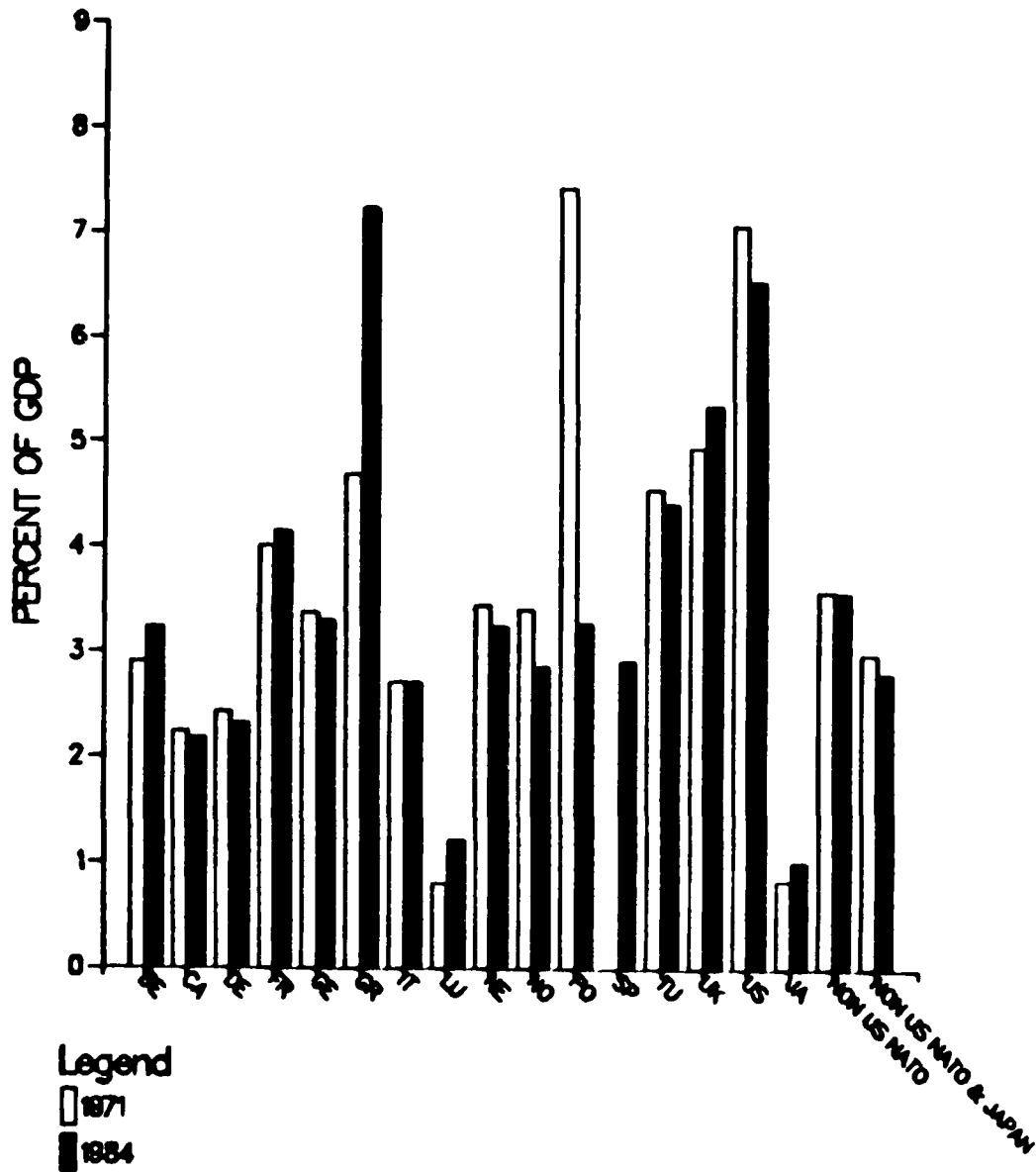
The obvious discrepancy between the US share and the shares of many of the allies can be attributed, in part, to our role as a nuclear superpower and our worldwide interests and responsibilities. The very low Japanese percentage and relatively modest German percentage follow partly from political and constitutional constraints (on defensive efforts for the Japanese and on overall force size for the Germans).

An examination of the trends indicates that the weighted-average percentage for all of the non-US NATO nations combined declined steadily during the 1960s. Since the early 1970s, allied defense spending has generally kept pace with economic growth, resulting in a level trend in share of GDP devoted to defense in 1971-84. By comparison, the US GDP

¹/ As a result of recently announced Department of Commerce "definitional and classificational" changes to the US national income and products accounts, US GDP statistics published in the future will show annual totals that are approximately \$150-200 billion higher than those used in this report. The higher GDP totals will result in a US share of GDP for defense that is approximately two-tenths of a percentage point lower than shown in this section and displayed in Charts II-7, A-13 and A-14.

CHART II-8

TOTAL DEFENSE SPENDING (CY)
AS A PERCENT OF GDP



percentage fell around 30 percent between the early 1970s and 1979, but turned sharply upward in 1980. The 1970s decline cannot be attributed solely to our Southeast Asia phase-down inasmuch as our percentage in the early 1960s, prior to the Vietnam buildup was two points above the early 1970s level (9.0 percent versus around 7.0).

TOTAL ACTIVE-DUTY MILITARY AND CIVILIAN MANPOWER

Charts II-9 and II-10 show the peacetime active-duty military and civilian manpower resources allocated to defense by each nation. Charts II-11 and II-12 provide similar breakouts for peacetime active-duty military manpower only (i.e., the figures exclude civilians).

Including civilian defense manpower helps eliminate comparability problems stemming from different national policies on the use of civilians for military tasks. Accordingly, the discussion below focuses on the combined military and civilian figures.

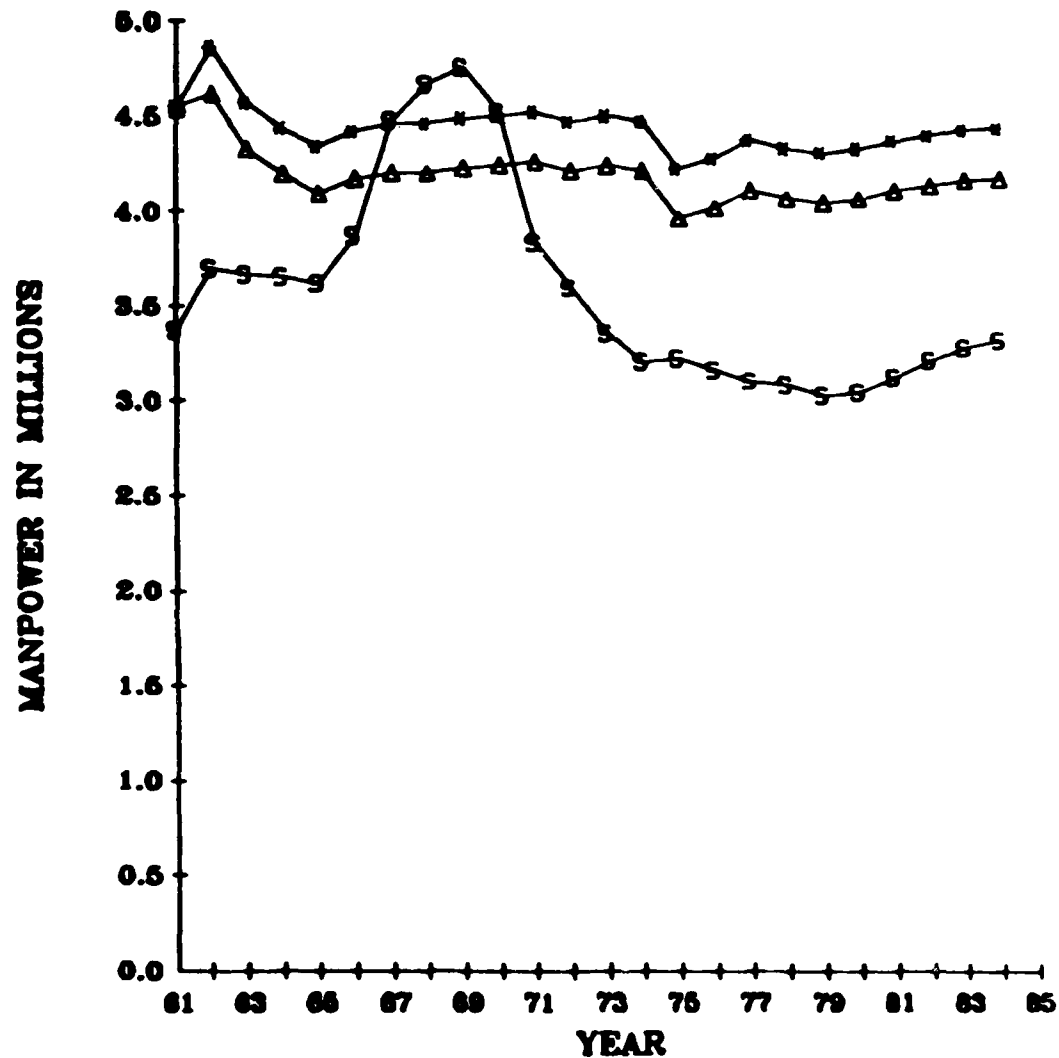
Since this indicator does not include reserve manpower, it tends to understate the efforts of nations, such as Norway, that have structured their forces around a small cadre of active-duty personnel that can be rapidly fleshed out (by drawing on a large pool of trained reservists) in an emergency.

Variations indicated by this measure can be attributed, among other things, to differences in (1) active/reserve policies, (2) the cost of manpower and (3) the extent to which programs emphasize labor-intensive forces (e.g., ground units) versus capital-intensive ones (navies and air forces).

A review of the trends indicates that US manpower levels declined by around 21 percent between 1971 and 1978, but then increased by about 10 percent between 1978 and 1984--for a net change of minus 13 percent over the 1971-84 period. The total strength of the non-US NATO allies remained practically unchanged during the early 1970s, but declined by around 5 percent between 1974 and 1976, reflecting, in part, reductions in British, Italian, and Portuguese manpower that were partially offset by increases in Turkish manpower. Then, during 1976-84, the trend turned upward, with the non-US NATO allies (less Spain) registering an increase of around 4 percent--reflecting a growth in Turkish and Italian manpower levels, a relatively more modest decline in the number of British personnel, and generally steady levels for most of the other allies. (Data on Spanish forces for prior years were not available for this report.) As a result of these changes in non-US NATO manpower levels, and a 2 percent increase in Japan's 1971-84 level, the US share of the NATO (less Spain) and Japan total fell from 45.9 percent in 1971 to 43 percent in 1984.

CHART II-9

**TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER
(IN MILLIONS)**



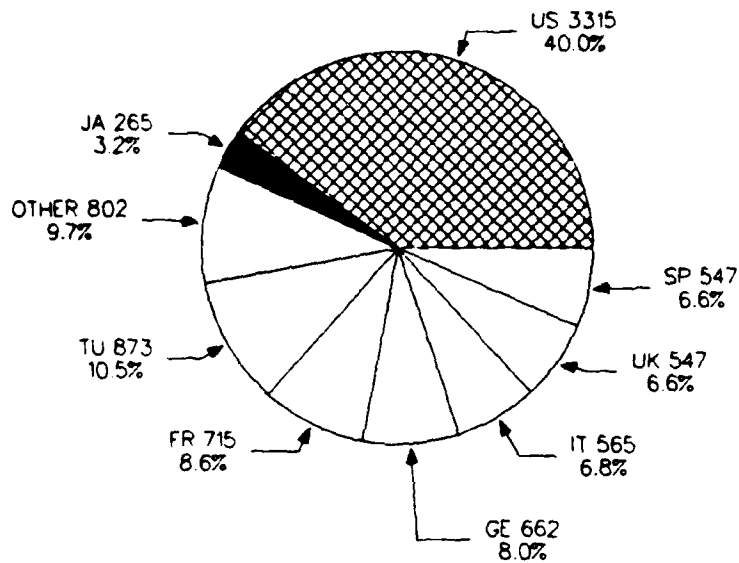
LEGEND

- UNITED STATES
- △ NON US NATO
- NON US NATO & JAPAN

FOOTNOTES

Excludes Spain

CHART II-10
TOTAL MILITARY AND CIVILIAN MANPOWER
(IN THOUSANDS)
1984
TOTAL NATO & JAPAN 8291



% CHANGE IN TOTAL MILITARY AND CIVILIAN MANPOWER (1971 VS 1984)

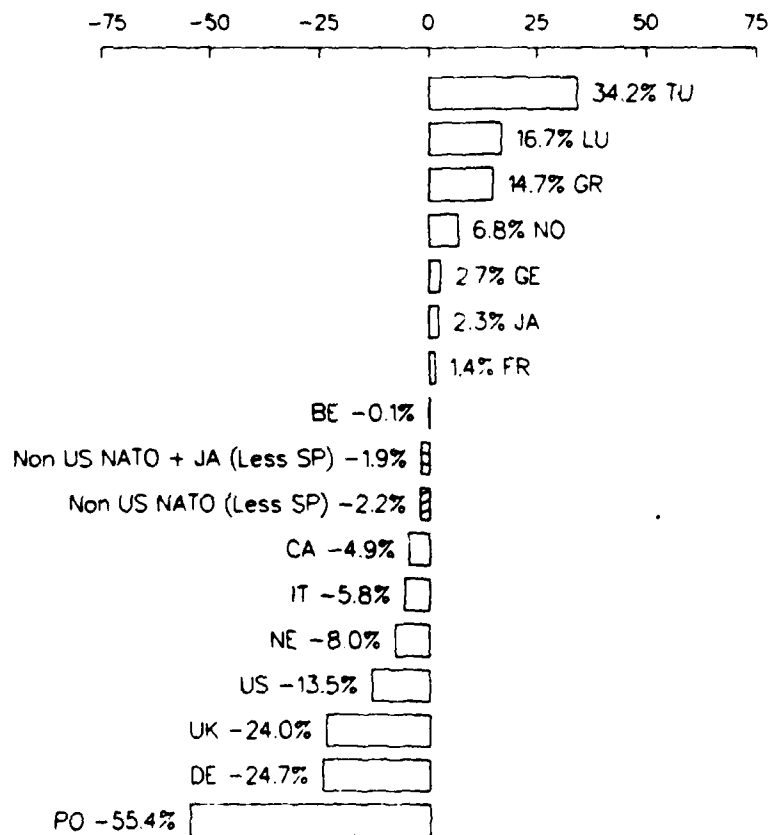
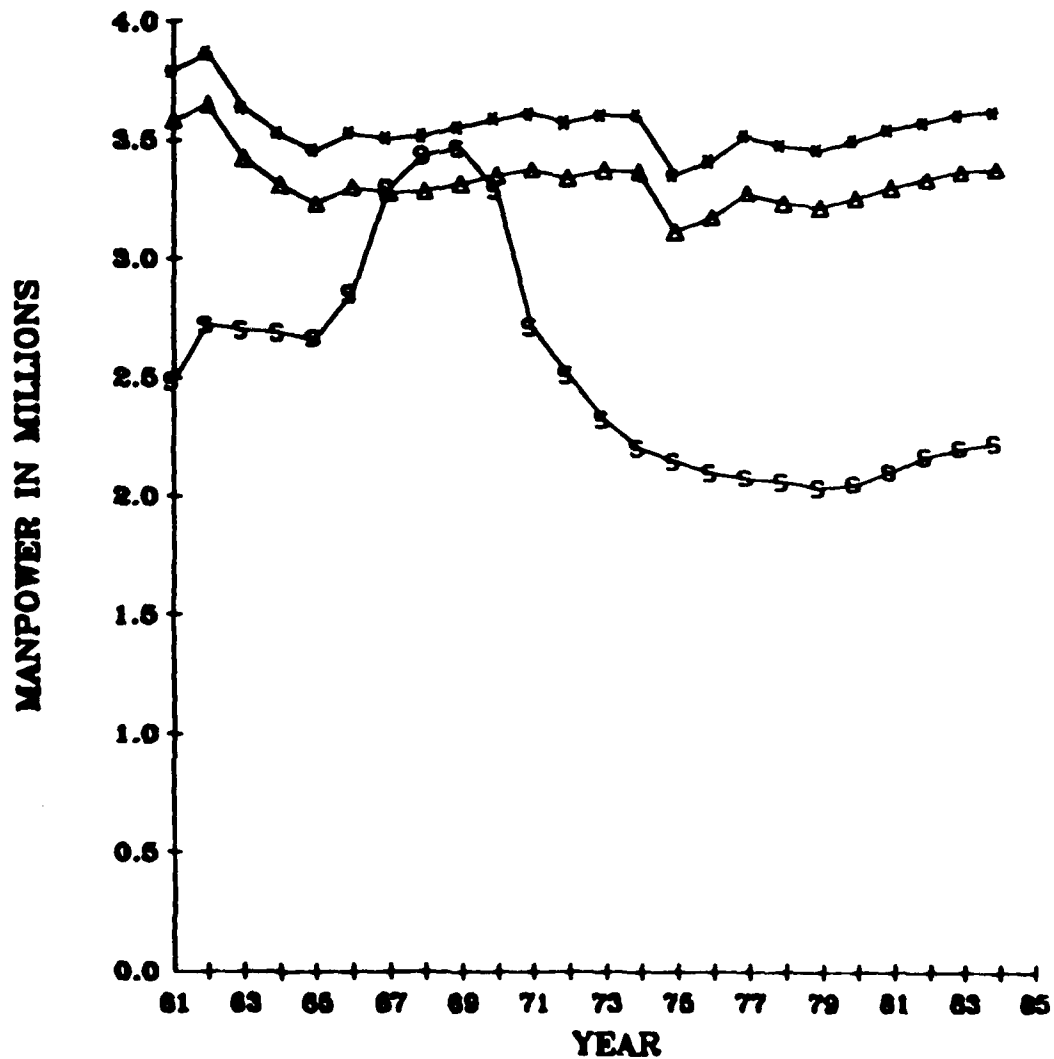


CHART II-11

**TOTAL ACTIVE DUTY MILITARY MANPOWER
(IN MILLIONS)**



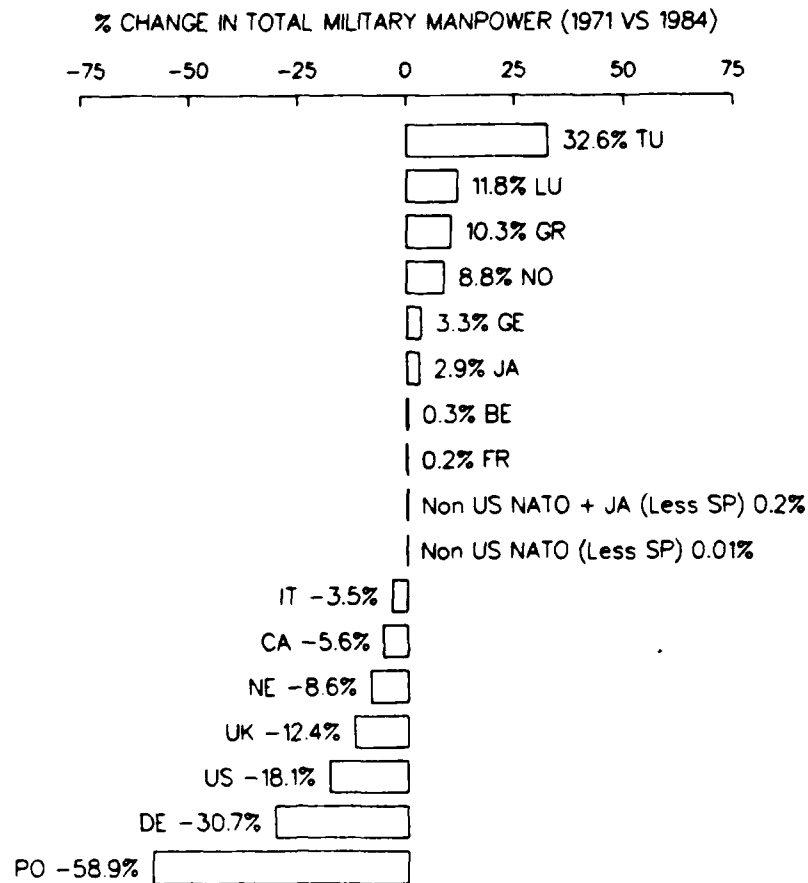
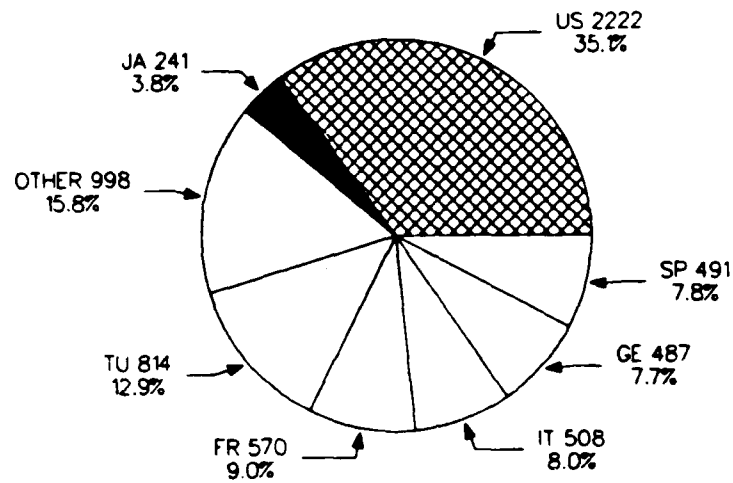
LEGEND

- S UNITED STATES
- Δ NON US NATO
- NON US NATO & JAPAN

FOOTNOTES

Excludes Spain

CHART II-12
 TOTAL MILITARY MANPOWER
 (IN THOUSANDS)
 1984
 TOTAL NATO & JAPAN: 6332



TOTAL ACTIVE-DUTY MILITARY AND CIVILIAN MANPOWER AND COMMITTED RESERVES

Chart II-13 reflects the active-duty military and civilian manpower figures recorded in the previous charts, plus an estimate of "committed reserves" (i.e., reservists with assignments after mobilization).

Including committed reserves, the NATO nations and Japan together have almost 13 million people under arms or in their civilian defense establishment. Of that amount, non-US nations account for 7.8 million (or 60 percent of the total), while the United States contributes about 4.8 million.

Most of the non-US NATO nations supply larger shares of the NATO and Japan total under this measure than they do under the "active military and civilian" measure used in the previous section.

DEFENSE MANPOWER AS A PERCENTAGE OF POPULATION

This widely used and generally well-understood indicator provides a basis for comparing the defense manpower contributions of nations, taking into account differences in the size of their populations. The percentages reported below were derived using combined military and civilian manpower levels (Charts II-14 and II-15). For purposes of comparison, figures for military manpower only are also provided (Charts II-16 and II-17).

Active-Duty Military and Civilian Manpower as a Percentage of Population (Charts II-14 and II-15). This indicator shows a wide variation among nations in 1984, ranging from a high of 2.35 percent and 1.8 percent for Greece and Turkey, respectively, to 0.4 percent and 0.2 percent for Luxembourg and Japan. The United States ranks fourth with 1.4 percent, following Spain (1.4 percent) and ahead of France (1.3 percent). Germany, The Netherlands, Italy, Belgium, Denmark and the United Kingdom all fall below the non-US NATO average of 1.19 percent. In reviewing Germany's relatively low position it is important to remember that the size of the German active-duty forces is limited by postwar treaties.

An examination of the trends reveal a 28 percent decline in the US share between 1971 and 1979, followed by a small increase (of around 4 percent) between 1979 and 1984--resulting in a 24 percent net decline for 1971-84. The weighted average percentage for all of the non-US NATO nations combined fell approximately 10 percent between 1971 and 1975, but since the mid-1970s' has remained generally level. The figures for Japan follow a pattern similar to that of the non-US NATO allies.

The United Kingdom's 25 percent decline is largely due to a drawdown in British forces outside of Europe during the late 1960s and early 1970s, whereas Portugal's sharp decrease--which caused its ranking to fall from first in 1971 to seventh in 1984--can be attributed to its massive withdrawal from Africa during the early 1970s.

CHART II-13

TOTAL MILITARY AND CIVILIAN MANPOWER
AND COMMITTED RESERVES (IN THOUSANDS)
1984

TOTAL NATO AND JAPAN: 12908.3

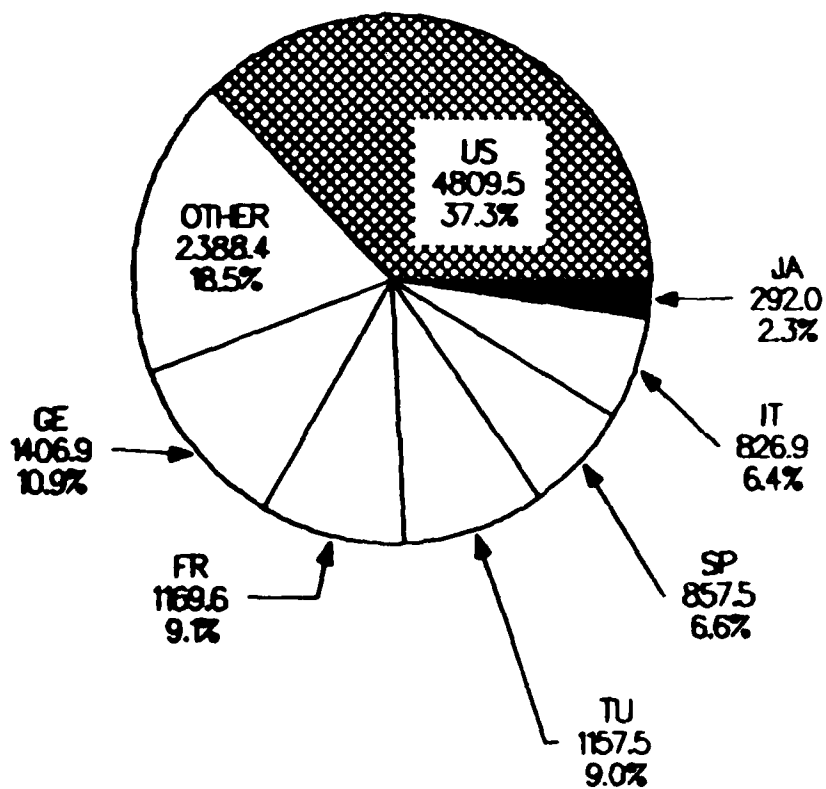
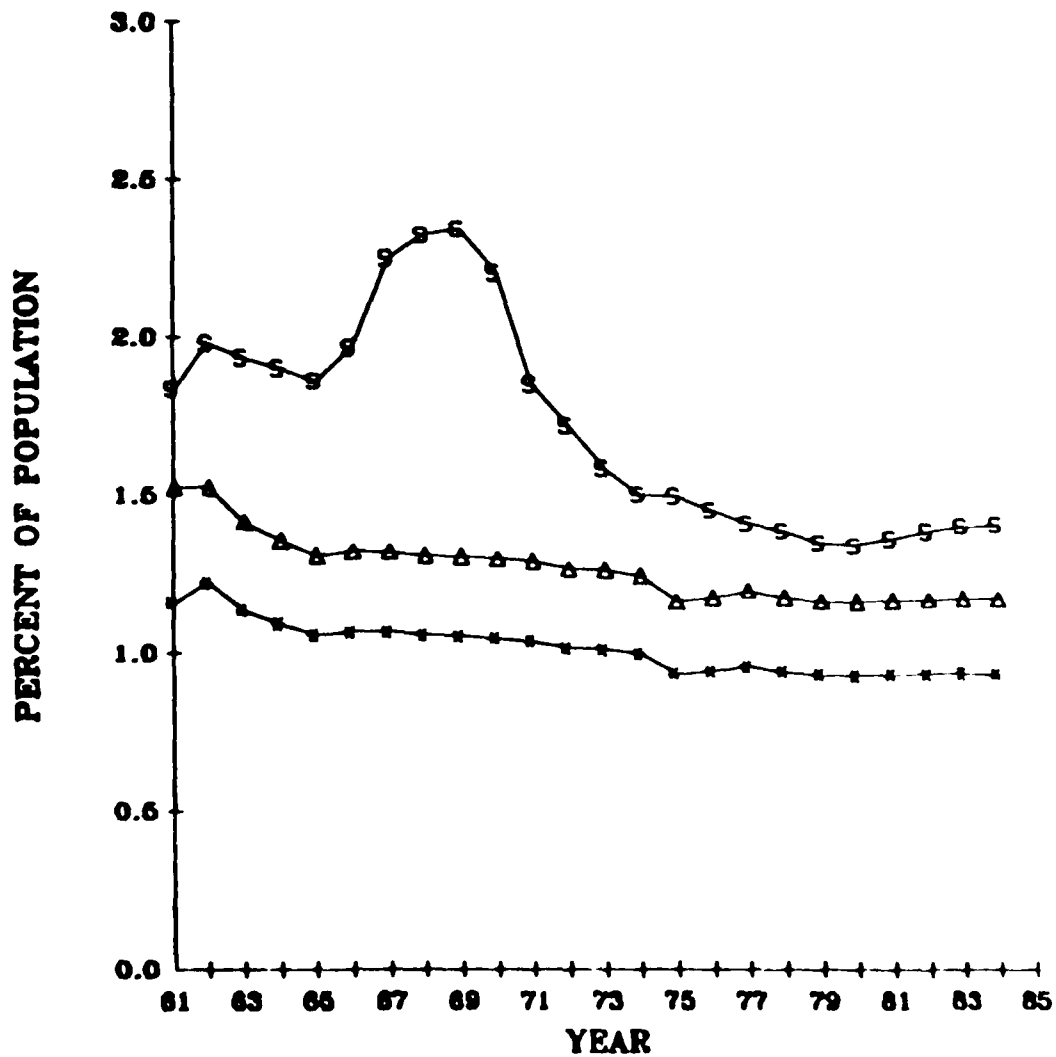


CHART II-14

TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER AS A % OF TOTAL POPULATION



LEGEND

- S UNITED STATES
- Δ NON US NATO
- NON US NATO & JAPAN

FOOTNOTES

Excludes Spain

CHART II-15

MILITARY AND CIVILIAN MANPOWER AS A PERCENT OF POPULATION

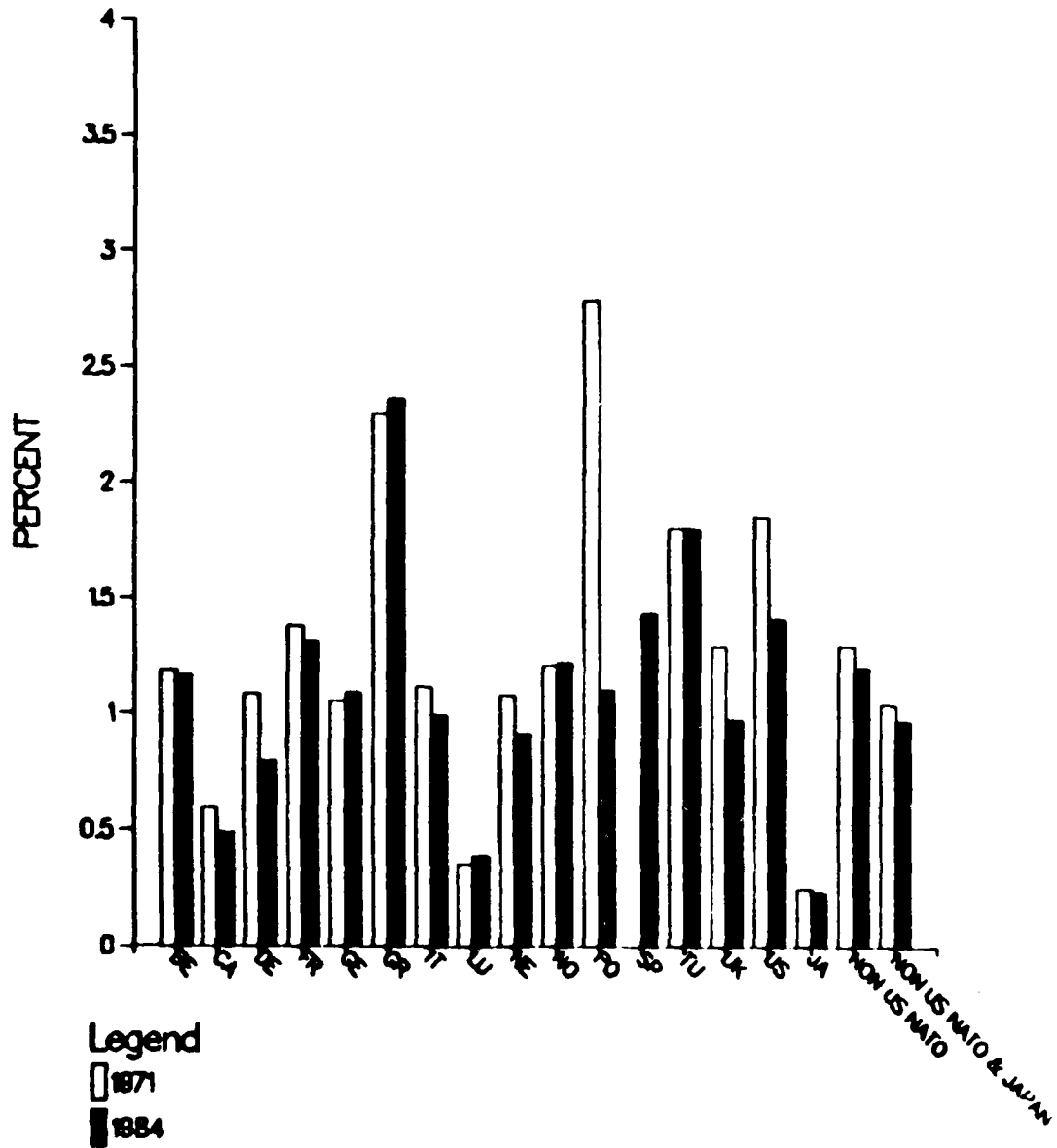


CHART II-16

**TOTAL ACTIVE DUTY MILITARY MANPOWER
AS A % OF TOTAL POPULATION**

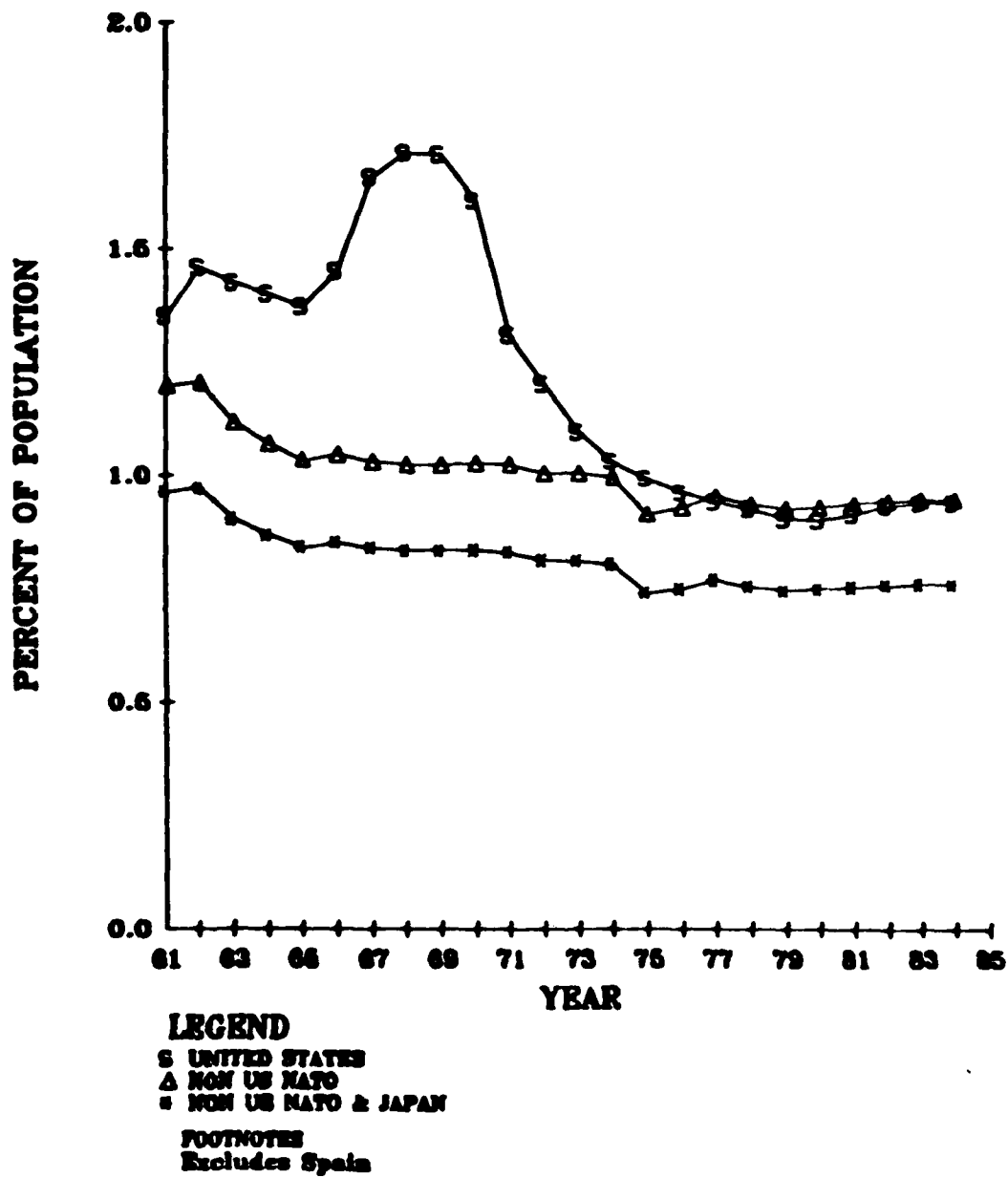
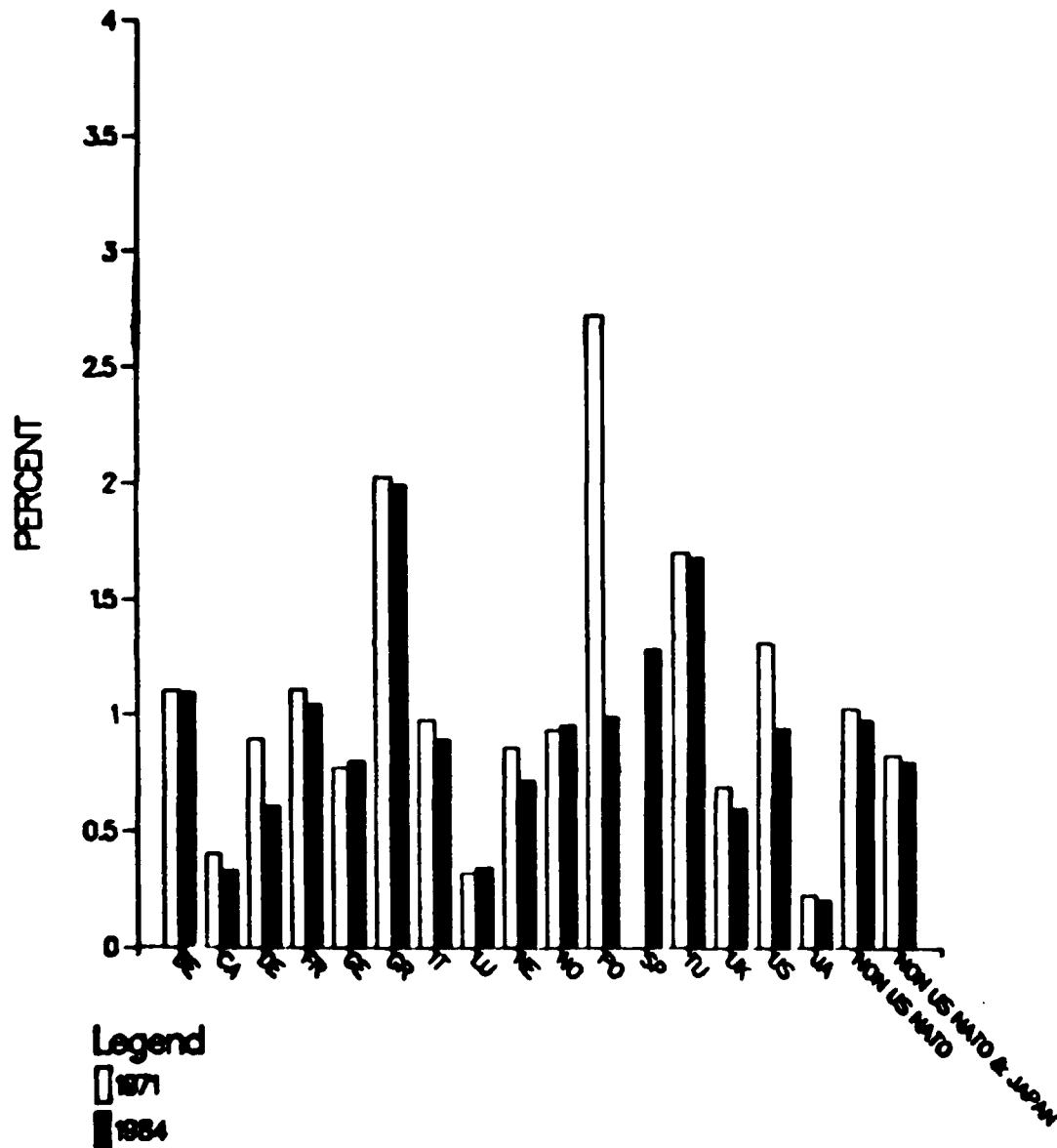


CHART II-17

MILITARY MANPOWER AS A PERCENT OF POPULATION



Active-Duty Military and Civilian Manpower and Committed Reserves as a Percentage of Population (Chart II-18). The results change considerably for several nations when reserve manpower is included in the calculation. By this measure, Norway and Denmark rank first and eighth (with percentages of 5.7 and 2.1 respectively), as against fifth and twelfth if only active manpower is considered.

It is important to emphasize that there are not single, comprehensive output indicators that fully reflect all of the factors that constitute military capability. The material presented here is intended to provide a thumbnail sketch of each country's force contributions by highlighting a few key static indicators that are widely accepted within the defense analysis community. The data used for these displays are based largely on US estimates and incorporate country responses to the NATO Defense Planning Questionnaire for those nations that participate in NATO's coordinated defense planning process.

GROUND FORCES

Armored Division Equivalents (ADE). The ADE is a relative measure of effectiveness of ground forces based on quantity and quality of major weapons. This measure is an improvement over simple accounts of combat units and weapons; however, it does not take into account such factors as ammunition availability, logistical support, training, communications and morale. At the present time there is no single indicator that incorporates these additional factors.

As Chart II-19 shows, the non-US nations combined account for 59 percent of the ADEs of the NATO members and Japan while the United States supplies the remaining. The allied contribution drops to 55 percent if Japan is excluded.

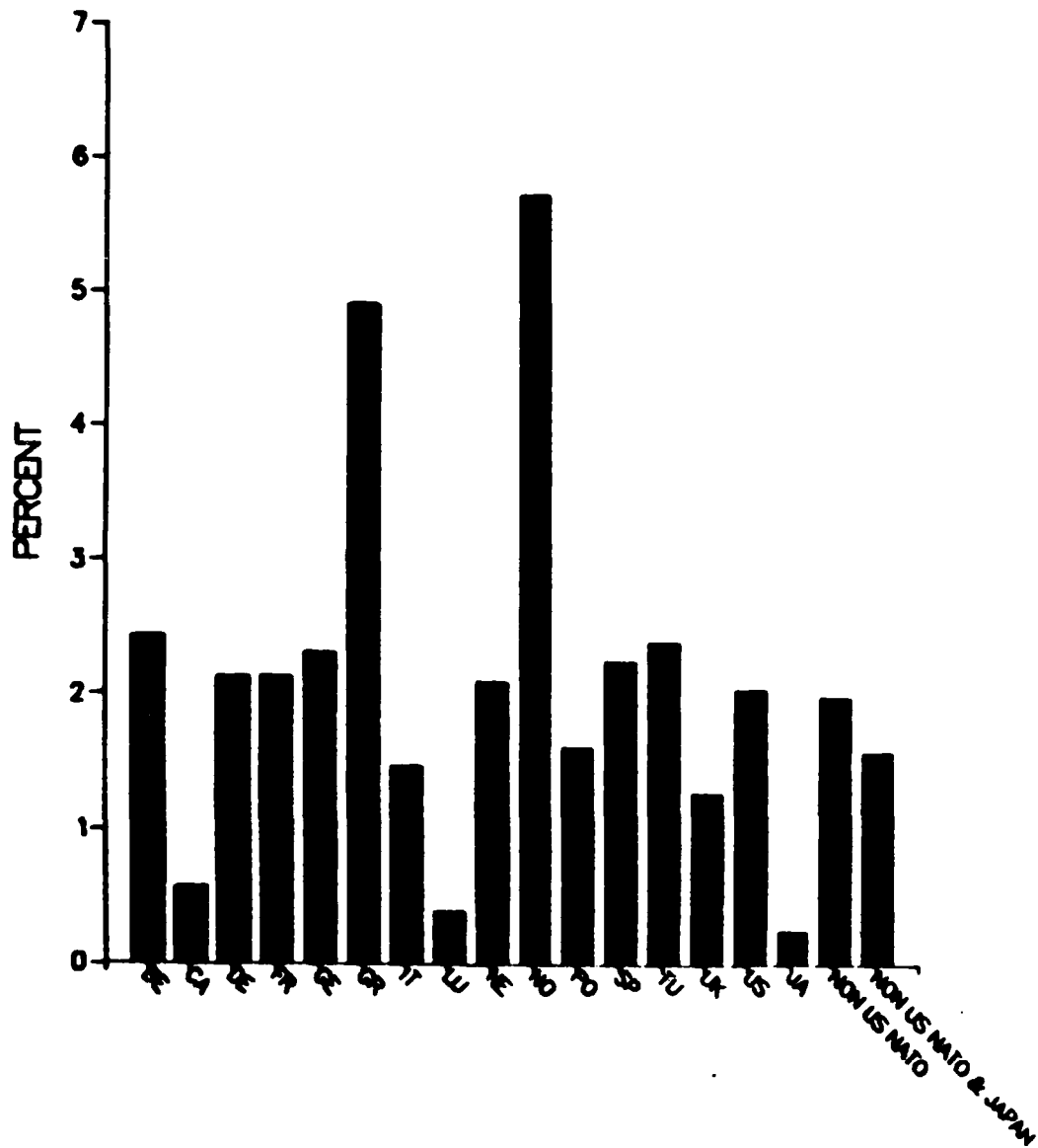
We have also examined current holdings of the NATO's nations in two categories of ground forces equipment -- main battle tanks and artillery. The most striking feature of this comparison is the large total volume of equipment maintained by the non-US nations as a whole relative to the US holdings. The holdings of all of the non-US nations combined exceed those of the United States by roughly 21 percent for tanks and by 104 percent for artillery.

NAVAL FORCES TONNAGE

Tonnage is a static measure of aggregate fleet size. For most purposes, it provides a more meaningful basis for comparison than do simple tallies of ships. The use of tonnage alone does not, however, provide any indication of the numbers of weapons aboard ships, or of the weapons' effectiveness or reliability. Nor does the measure take account of the less tangible ingredients of combat effectiveness, such as personnel training and morale. Consequently, tonnage data should be considered as giving an indication of naval potential.

CHART II-18

**MILITARY AND CIVILIAN MANPOWER
AND COMMITTED RESERVES
AS A PERCENT OF POPULATION
1984**



ARMORED DIVISION EQUIVALENTS (ADE'S)

1984
TOTAL NATO AND JAPAN

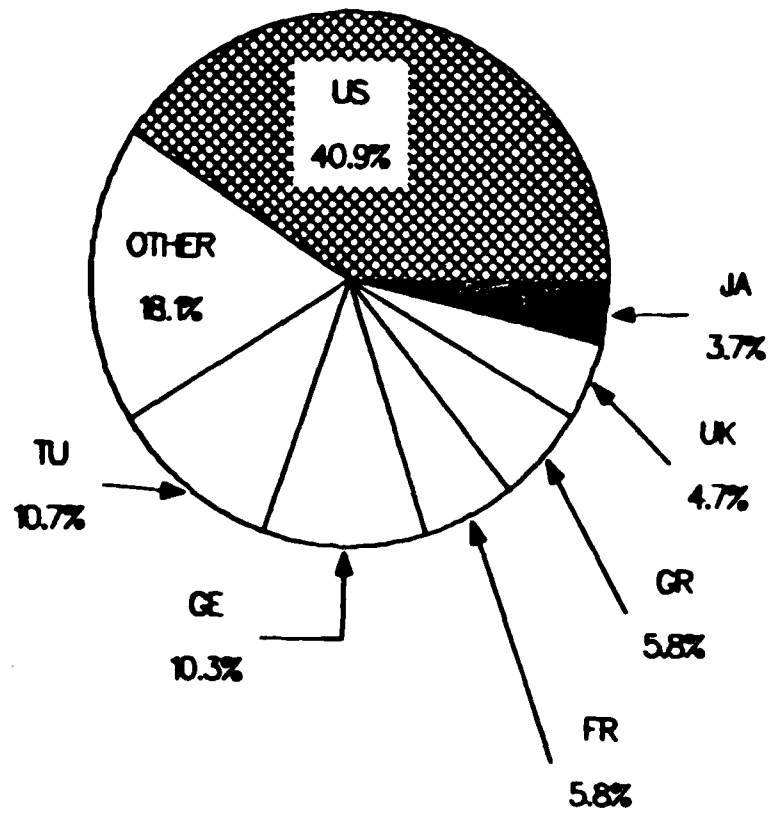


Chart II-20 shows the aggregate tonnage of the US, non-US NATO, and Japanese navies, excluding strategic missile submarines. The US contribution is 64 percent, compared with 33 percent for the non-US NATO allies and 36 percent for the non-US NATO nations and Japan.

It should be noted these data include for the US some tasks that allied navies do not customarily perform, (e.g., fleet support, sealift, and amphibious operations). When only major surface combatants--the ship types more closely associated with the primary roles of allied navies--are included, the picture changes somewhat (see Chart II-21). By this measure, the US share declines to 55 percent, compared with 39 percent for the non-US NATO nations (and 45 percent, if Japan is included).

An analysis of the modernization programs being undertaken by the US and allied navies shows that the amount of "first generation" tonnage is heavily influenced by the aging Greek and Turkish fleets, which together contribute about one-third of the tonnage in that subcategory. When just surface combatants are counted, Canada, Greece, and Turkey contribute slightly less than sixty percent of the non-modernized tonnage in the non-US NATO fleets. That picture should change over the next decade, however, as all three countries have ambitious modernization programs under way.

France and Germany are also in the process of replacing those portions of their fleets built in the 1950s and early 1960s. As a rule, the allies tend to keep their ships--especially principal surface combatants, support, and amphibious vessels--longer than the United States does, replacing them only when block obsolescence affects several classes.

AIR FORCE TACTICAL COMBAT AIRCRAFT

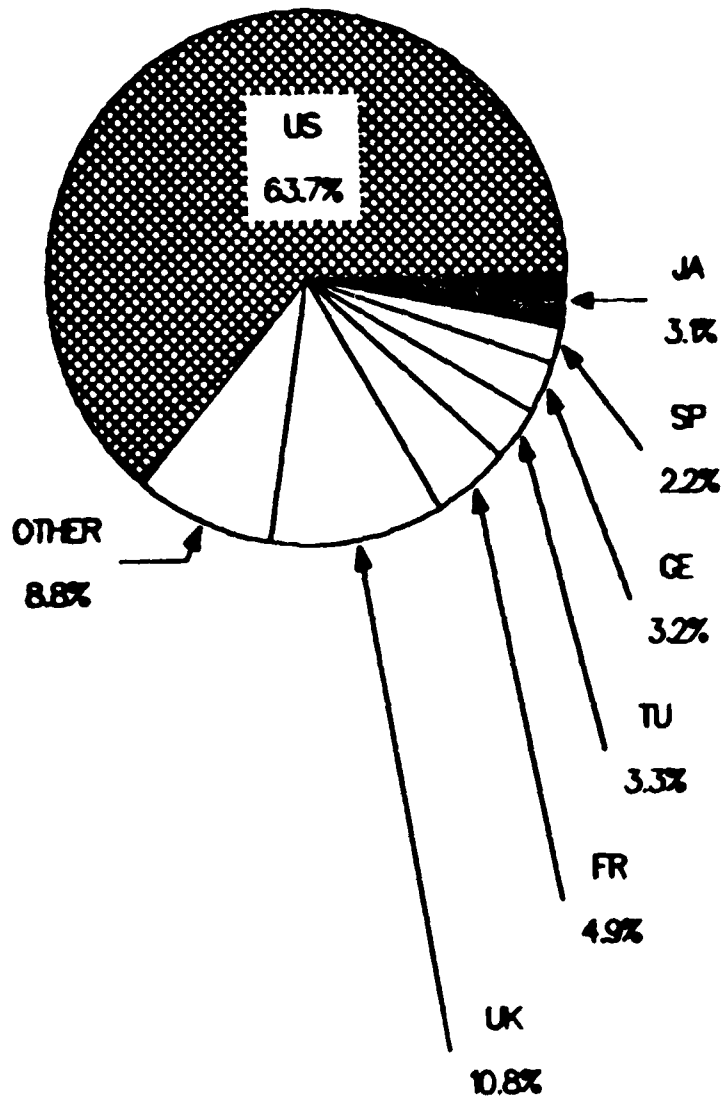
The total number of fighter/interceptor, attack, bomber, and tactical reconnaissance aircraft in the NATO and Japanese inventories is shown in Chart II-22 along with each country's share of the total. Trainer aircraft considered to be combat capable are included in the equipment counts; electronic warfare aircraft are not.

Although no single non-US nation accounts for more than 10 percent of the NATO and Japan total, the combined holdings of these countries represent 59 percent of the total. Excluding Japan, the non-US NATO share drops slightly, to 55 percent.

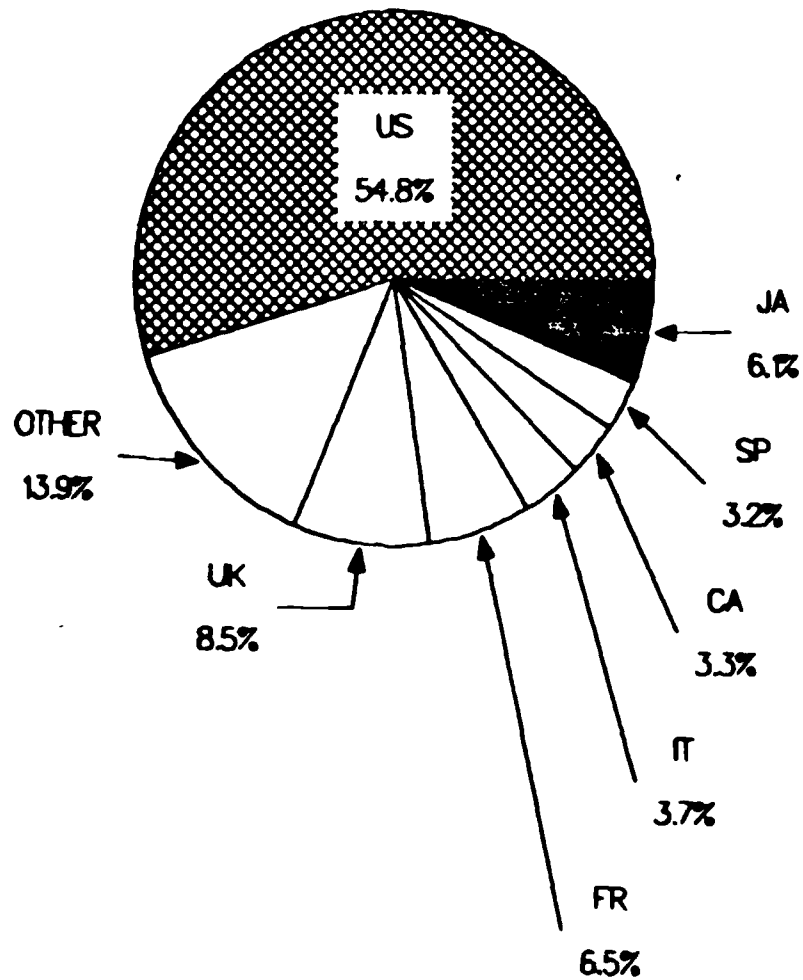
With 43 percent of its inventory consisting of new-generation aircraft and the remaining 57 percent comprising current-generation equipment, the U.S. Air Force is further along in its aircraft modernization program than are the air forces of the other NATO members. For those countries, new-generation aircraft constitute 20 percent of their combined aircraft holdings, whereas current-generation models account for 67 percent and older planes for the remaining 13 percent. That picture, too, will change over the coming years, as the major modernization programs now under way within most of the allied air forces near completion. As a result, by the late 1980s, new-generation aircraft will constitute a sizable share of the allied inventory with few older-model planes remaining except in the southern flank countries.

CHART II- 20

**TOTAL NAVAL FORCE TONNAGE
(ALL SHIPS LESS STRATEGIC SUBMARINES)
(IN THOUSANDS)
1984 - TOTAL NATO AND JAPAN**

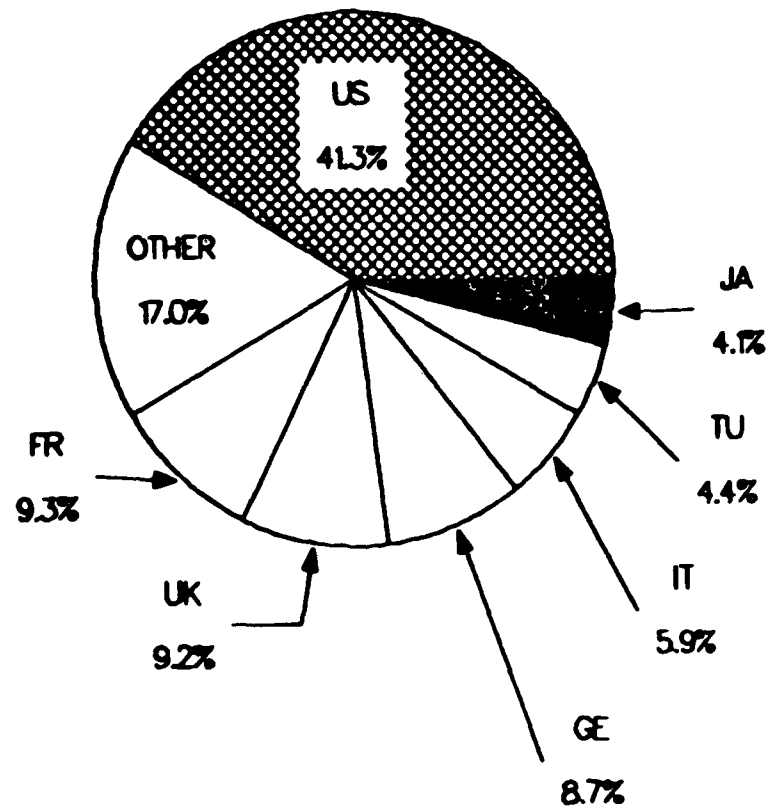


TOTAL NAVAL FORCE TONNAGE
(PRINCIPAL SURFACE COMBATANTS)
(IN THOUSANDS)
1984 - TOTAL NATO AND JAPAN



TACTICAL AIR FORCE COMBAT AIRCRAFT

1984
TOTAL NATO AND JAPAN



ALLIED PERFORMANCE IN ACHIEVING NATO'S THREE PERCENT REAL GROWTH GOAL

The following paragraphs address the Congress' request for estimates of the rate of real growth in defense spending achieved by each of the NATO allies in recent years. Table 11-23 presents country-by-country estimates of the percentage change in real defense spending for 1981 through 1985. These figures--some of which are still subject to change--show real increases for most countries, and weighted-average increases for the non-US NATO nations as a group of 2.9 percent (2.8 percent including Spain) for 1981, 2.4 percent for 1982, 1.3 percent (1.4 percent including Spain) for 1983, and 2.0 percent for 1984 (2.2 percent including Spain). The weighted-average increase for 1985 is estimated to be 1.5 to 1.6 percent.

Six of the NATO allies--Canada, France, Germany, Greece, Luxembourg, and The Netherlands--had increases in the region of three percent or more in 1981, while Norway came close with a 2.7 percent increase. (NATO interprets "in the region of three percent" as being an increase of 2.8 percent or greater.) Six nations reported such increases in 1982: Canada, Italy, Luxembourg, Norway, Turkey, and the United Kingdom. Four nations--Canada, Luxembourg, Norway, and Spain--were in the three percent range in 1983, while six -- Canada, Greece, Italy, The Netherlands, Spain and the United Kingdom --achieved this objective in 1984.

Preliminary estimates for 1985 indicate that three or four countries -- Belgium, Norway, Turkey and possibly Spain -- achieved increases in the three percent range.

Although the real increases in US spending exceed the average growth rates of allied defense programs over the 1981-85 period, the high US growth rates in recent years reflect in part an effort to compensate for the real decreases and low growth rates we experienced during most of the 1970s, when our allies were achieving steady real increases. Accordingly, US cumulative real defense spending for the early 1970s through the mid-1980s was the same amount it would have been if US defense spending had declined by a uniform annual rate of roughly 1 to 2 percent each year during that period. A comparable computation for the non-US allies results in a uniform annual rate of plus two percent.

Although not required by the Congressional reporting requirement, Japan's real increases are shown for information at the bottom of Chart 11-23. These figures indicate a high rate of real growth -- on the order of five to six percent per year -- for the 1981 through 1985 period.

CHART 23
GROWTH IN TOTAL DEFENSE SPENDING OF NATO COUNTRIES AND JAPAN
Percent Change from Previous Year in Constant Prices (Excluding Inflation)

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985 (Est.)</u>
Belgium	0.9	-0.1	-0.2	0.3	4.1/6.1
Canada	3.1	4.9	8.0	7.7	0.8
Denmark	0.6	-0.3	0.8	-1.1	1.0
France	3.9 ^a /	1.3 ^a /	1.8 ^a /	-0.2 ^a /	-0.3 ^a /
Germany	3.2	-0.7	0.9	-0.5	2.1
Greece	22.8	-1.1	-8.5	17.3	0.3
Italy	-0.5	3.1	2.5	2.8	2.2
Luxembourg	4.8	3.9	3.5	0.4	-0.5
Netherlands	4.2	2.2	0.5	3.2	-1.2/0.7
Norway	2.7	4.1	4.0	-4.6	15.8
Portugal	1.2	0.6	-2.5	-4.6	1.0
Spain	1.1	2.3	4.2 ^a /	5.1 ^a /	2.2/3.6 ^a /
Turkey	1.8	4.6	-4.4	-1.3	3.2
United Kingdom	1.4	6.0	0.4	4.1	1.7
United States	4.7	7.2	8.0	4.8	7.9
Non-US NATO Total ^b /					
Excluding Spain	2.9	2.4	1.3	2.0	1.5/1.6
Including Spain	2.8	2.4	1.4	2.2	1.5/1.7
NATO Total ^b /					
Excluding Spain	4.1	5.6	5.9	4.0	6.0/6.1
Including Spain	4.1	5.6	5.9	4.0	6.0/6.0
Japan ^c /	4.8	5.9	5.6	5.8	4.9/5.4

NOTE: The spending totals from which these figures were derived reflect NATO's definition of defense spending and are the best estimates that can be made on the basis of information now available. National fiscal years correspond to calendar years except for those of Canada and the United Kingdom, which run from April to March, and the United States, which begins its fiscal years in October. Turkish data through 1981 are based on a March-February fiscal year; in 1983, Turkey converted to a January-December fiscal year.

^a/ DoD estimate.

^b/ Weighted average growth rates developed using constant 1984 prices and 1984 exchange rates.

^c/ Not included in totals.

III. EFFORTS TO ELIMINATE DISPARITIES AND IMPROVE ALLIED PERFORMANCE

In December 1985, NATO defense ministers reviewed progress toward fulfillment of NATO force goals for the six-year period 1985-1990. These goals, adopted in 1984, provided clear guidance on burdensharing to all NATO nations.

The most important initiative with implications for burdensharing undertaken during 1985 was the development and launching of the conventional defense improvements (CDI) effort. Initial national responses to this effort were examined during the review of defense plans in late 1985, and assessments are favorable. The most important CDI-related force goals will be highlighted in each Nation's force goal package for the 1987-1992 period, and fulfillment of these highlighted force goals will be an integral feature of the annual review of defense plans. The CDI effort offers considerable promise over the long term for increasing allied contributions to the military capabilities needed for the common defense of the Alliance.

Favorable results can be reported in two other burdensharing efforts during 1985. Progress continues in negotiations and preparations for host nation support (HNS) throughout the Alliance, with measurable increase in the execution of the US-Germany plan for providing wartime HNS to American forces in the central region. Additionally, those allies committed to sharing the INF burden continued to carry out plans for deployment during 1985.

BURDENSARING AND NATO DEFENSE PLANNING

Annually, each allied nation submits a reply to the NATO defense planning questionnaire (DPO) which covers its five-year defense plan. The content of the DPO itself is reviewed annually, and the US has pressed continually for the DPO to call for an increasingly detailed and revealing report of both the inputs and outputs related to allied defense efforts. Upon receipt of allied replies to the DPO, which are due on 31 July of each year, U.S. mission to NATO assesses each nation's efforts and proposes an appropriate approach for the US to take during the Defense Review Committee (DRC) multilateral reviews of national defense plans. These multilateral reviews offer significant opportunities to influence the nations' plans to improve their conventional capabilities and thereby their burdensharing performance. Following the defense review, the DRC drafts a general report for ministers, which is a useful vehicle for calling attention to the need for greater effort by all NATO nations.

In the spring of each even-numbered year, NATO adopts a new set of force goals, which are formal targets for improvement of military forces committed to the Alliance. These force goals are drawn from draft force proposals prepared for each member nation (less France, Spain, and Iceland) by the major NATO Commanders and approved by the NATO military committee. The Defense Review Committee conducts multilateral examinations of the sets of proposals for each individual nation and forwards the resulting set of draft force goals to the permanent representatives who then formally adopt them on behalf of ministers as national planning objectives.

NATO Force Goals 1985-1990: In spring 1984, NATO adopted a balanced force goal package for each nation for the period 1985-1990, although these force goals -- and they are "goals," not "Quotas" -- do not seek all of the force improvements that the major NATO commanders (MNC's) would like the NATO nations to provide. Goals are tailored to the needs of each country and normally exceed the ministerially approved guidance that nations should aim to meet or exceed the 3 percent formula as a general guideline. To the degree that nations implement these force goals, the overall defense capabilities of the Alliance are enhanced and burdensharing is improved. The next set of force goals to address the period 1987-1992, is in preparation and will be reviewed by defense ministers at their meeting in spring 1986.

NUCLEAR PLANNING GROUP

The NATO nuclear planning group (NPG) includes the defense ministers of all Alliance countries less France and Iceland. In their semiannual meetings, NPG ministers have called attention to the importance of sharing the risks and costs of maintaining Alliance nuclear deterrent forces. Furthermore, ministers have reaffirmed the need to maintain deterrent forces whose delivery systems and warheads are survivable, responsive and effective. NPG communiques and other NATO documents reflect this attention. On a permanent basis, the NPG is represented in NATO Headquarters by the NPG staff group which performs the day-to-day work, including work on documents and reports designed to enhance the understanding by allied governments and their publics of the necessity to share the risks and costs of maintaining the nuclear deterrent.

The continuing implementation of NATO's 12 December 1979 dual-track decision is perhaps the most obvious example of the willingness of NATO nations to share the considerable political costs as well as the military risks associated with the modernization of NATO's LRINF forces. In particular, the governments of the basing countries -- the UK, Germany, Italy, Belgium, and The Netherlands -- have been subjected to intense political pressure from elements of their own publics as well as from foreign governments and peace groups to alter their support for deployment even without a concrete negotiated result obviating the need for such deployment. Without the steadfast support of these governments in particular, and their willingness (in the case of the UK and Germany) to undertake ambitious public information programs, deployments would not have been possible.

COMMONLY-FUNDED PROGRAMS

In NATO, common funding and cost-sharing in various multinational fora go hand-in-hand with the broadest possible cooperation for common defense. The long-accepted principle of one country, one vote (despite unequal cost-shares) is the basis for unanimous agreements for common funding by the whole membership. With few exceptions, this common funding theme applies to the NATO infrastructure program; to the program for operations and maintenance (O&M) of the NATO military headquarters, agencies, and military common use facilities, and to the NATO civil budget for O&M of the NATO headquarters, the NATO building and civil programs.

In the early 1950's, political decisions which established the widely varying NATO country cost-shares of the common funding programs were heavily influenced by economic indications of the comparative abilities of the nations to contribute. More recently, our allies have increased their contributions to such programs beyond their proportion of NATO's GNP (or GDP) in recognition of greater US expenditures on other defense programs.

Infrastructure Program The infrastructure program finances the capital costs of commonly funded and standardized military facilities for wartime common use, for joint use by two or more countries, or by NATO-committed forces of one country. The facilities produced by this program, since 1950, are the most tangible evidence of NATO cooperation. Its benefits, in addition to the security aspects, are further shared by all participating countries in terms of actual use by their forces, economic gains from their presence and operations, and from commercial competition for the labor-intensive construction work and the high-value communications electronics equipment contracts involved.

Originally, the US share of the infrastructure program was over 43 percent. At present, the US share is about 28 percent; 12 other countries provide the remaining 72 percent. However, France joins in funding air defense projects, which adjusts the US share to about 24 percent, with the other allies paying the remaining 76 percent. The country cost/sharing percentages are normally reaffirmed every five or six years when NATO defense ministers decide upon multi-year program levels. They were most recently reviewed in 1984.

In December 1984, the NATO nations agreed on a new six year (1985-1990) infrastructure ceiling of international accounting units (IAU) 3.0 billion. Although this total fell short of the US goal of IAU 3.88 billions, it nonetheless represented a significant (55 percent) increase in real terms in funding for this important program over the previous period. Many other nations also supported the higher ceiling, but believed that NATO could not obligate more than IAU 3.0B of construction during the period. Our agreement to the lower funding level was given in return for an agreement to review the program in 1987-88 to determine if execution had improved enough to warrant a further increase in infrastructure funds. While our cost share has remained under 28 percent.

With the third year (Slice) of this substantially larger program now ready for execution, most higher-priority US infrastructure requirements are either programmed or planned. These include essential airfield facilities for US reinforcement aircraft, shelters for reinforcement aircraft, shelters for reinforcement aircraft, completion of the Patriot missile deployment; construction of fuel storage and distribution facilities in Iceland; storage and airfield facilities in Norway to support a US marine amphibious brigade; storage requirements associated with the US/Germany wartime host nation support agreement, and facilities for US combat helicopters.

Military budget. The second common funding category, that of recurring operations and maintenance (O&M) expenses, covers cost-sharing for the international military headquarters and agencies as well as peacetime O&M costs for the use of certain infrastructure-built systems and facilities (communication, POL pipeline, war headquarters) which are totally for NATO common use. The US share of this NATO military budget is currently about \$150 million yearly. It is important to note, however, that most infrastructure-built facilities are intended for the use of forces committed to NATO by one or more member nations. In other words by less than all of the member nations. In these cases, each using country pays unilaterally for its share of the O&M costs for each facility.

Civil Budget. The NATO civil budget provides for the O&M costs of the NATO headquarters building in Brussels, Belgium, for its civilian personnel, and for a few NATO non-military activities. This program is financed from non-defense budgets of all NATO countries. The current US share of 23.4 percent is budgeted by the Department of State. The total civil budget was about \$66 million in 1985.

NATO Science Program. The NATO science program is a jointly-funded program which promotes scientific research through grants and fellowships to scientists from Alliance nations. The research is generally in a physical science. One element of the program, "science for stability" is designed to stimulate domestic technology development in the Alliance's less developed members, Greece, Turkey, and Portugal. With the entry of Spain into the Alliance, some funds may be spent there. The program aims to promote links between academia science and industry in the three countries, rather than to sponsor research at the cutting edge of any particular technology. The cost of the science program is approximately \$16 million and the "science for stability" program has a budget of about \$2 million.

Von Karman Institute (VKI). The VKI is a post-graduate research center in fluid dynamics. It is located in Waterloo, Belgium, and has an international reputation as a research center in that field. It is funded by 13 members of the Alliance and has a staff of students and instructors nominated by the supporting member nations. The US share (\$223,000) is contributed in its entirety by the US Air Force. The Air Force is very interested in the programs of the institute and in continuation of its contribution.

Conclusion. All categories of NATO cost-sharing have served the US well. While total US defense expenditures continue to exceed those of all the other NATO countries combined, the US contribution to all of the common funding programs (i.e., infrastructure, military budget, civil budget) averages less than 30 percent.

JOINTLY-FUNDED PROGRAMS

There have been numerous other cooperatively-financed joint ventures in NATO. Their contributions vary and involve only those countries which have special reasons to participate and to share the costs. These include consortia financing programs, which usually involve coproduction or joint ventures. They are developed by the participating countries and are

appropriately endorsed by NATO. Country contributions relate directly to the benefit that each country expects from the project. This consortium approach has been used to procure, store and distribute spares, replacement components and supplies, and to operate installations that serve only directly participating/paying countries. Examples of these projects include the NATO Maintenance and Supply Agency (NAMSA) in Luxembourg, and the NATO Hawk Production and Logistics Organization (NHPLO) in Paris. Special innovations are adopted for special projects, such as the multi-country funding of both capital costs and O&M costs for the NATO airborne early warning and control system (AEW&CS). Since the costsharing percentages of country contributions to such ventures are different from those established for common funding programs, they are administered as separate entities.

ARMAMENTS COOPERATION

Our armaments cooperation activities focus on equitable burdensharing with Alliance and other countries with whom we share security interests. Since 1957, when initial agreement was reached on NATO coproduction programs, there have been over 200 activities in the form of bilateral and multilateral codevelopment, coproduction, and licensed production projects, memoranda of understanding and family of weapons projects.

The broad base for cooperation continues to expand as more industry-to-industry relationships are developed. The multiple-launch rocket system (MLRS) is an example of a US system with early European involvement. The AV-8B Harrier program is an example of a European system with US industrial team arrangements for coproduction. The US Army recently decided to acquire the mobile subscriber equipment (MSE) system which includes major elements of the French-designed Rita system. The French will coproduce Rita-derived MSE components. In terms of its dollar value, this procurement is of great significance. The three-nation rolling airframe missile (RAM) and the four-nation terminal guidance warhead for the MLRS program are examples of cooperative developments involving technology exchanges of advanced technologies. The United States is involved in all of these programs. However, our European allies are also engaged in a multitude of cooperative ventures, such as the Tornado aircraft. In these programs, they share the cost burden and the risk of developing and producing equipment which can meet the Alliance needs.

Significant improvements have been made in NATO's air defense coverage through a joint effort with the Congress. Innovative agreements have been signed with Germany for acquisition of the Patriot air defense system and for point defense of airfields with the European Roland system. The Netherlands and the US have entered into a similar innovative cooperative arrangement for The Netherlands Patriot. Discussions with Belgium and Italy regarding the Patriot system are now underway as well. These efforts will result in enhanced effectiveness and interoperability in NATO's air defense.

The emerging technologies initiative, now endorsed by all NATO ministers, offers a cogent demonstration of NATO's determination to increase NATO's conventional defense capabilities through armaments

cooperation. This initiative focuses on near-term efforts to field military equipment which would make a substantial difference in the ability of Alliance forces to repel an aggressor. A key feature of the emerging technologies initiative is that opportunities are provided for early entry into high-technology programs. The US must share technology to make the emerging technologies initiative succeed, but the technology that is shared must be protected from compromise through strengthened safeguards. This initiative to exploit emerging technologies to improve conventional defense is proceeding in NATO. Specifically, it will focus Alliance resources on an initial small number of programs endorsed by NATO. Additional candidate programs have been proposed by both the US and IEPC nations and are currently under review. This NATO-wide effort is expected to provide significant conventional capabilities within this decade, e.g., in forward defense, attack on follow-on forces, counter air, C3I, and C3 countermeasures. NATO has also agreed to establish a group to review long-term emerging technologies which is to seek exploitation of even less mature technologies; we believe this effort holds great potential for cooperation in the early stages of programs.

We are also actively pursuing cooperation with Japan and other allied and friendly nations on a bilateral basis. Our focus is upon defined forces and missions which meet US and allied objectives collectively. We are working to understand both of our needs in order to most effectively use the resources of all. Last year, we signed "Detailed Arrangements" with Japan, completing a framework to facilitate the flow of their technology to the US with the aim of utilizing it to meet our mutual broad-based defense mission needs. We have made continued progress in establishing balanced armaments cooperation with Japan. The Defense Department has conducted an assessment of the potential means for enhancing an extensive assessment of two critical technological areas to determine whether increased US-Japan cooperation in those selected areas would be in the mutual interest of the US and Japan. The Defense Policy Advisory Committee on Trade (DPACT) is preparing an assessment of increased armaments cooperation from the perspective of both trade and defense. These efforts are focused within the DoD to ensure our overall program of armaments cooperation is balanced and in our national interest.

On an individual basis, many of these armaments cooperation projects can be considered successful as they have achieved a measure of standardization and interoperability and an exchange and infusion of technology into weapons systems that have enhanced Alliance capabilities. However, much more work remains to be done. NATO's cooperative efforts to date have not produced that degree of weapons modernization and interoperability, equipment availability and combat readiness needed to offset the numerical superiority and increasing sophistication of the Warsaw Pact forces, nor enough combat sustainability to enable NATO's conventional forces to resist a Warsaw Pact attack for more than a limited time. The Nunn and Quayle Amendments are welcomed in that they should do much for enhanced armament cooperation. An initiative is underway to upgrade US origin equipment in the hands of friendly and allied countries. Positive results are expected as this initiative becomes a reality.

Cooperative acquisition of armaments, through equitable burdensharing, is a key element of efforts to increase the conventional capabilities of the Alliance. Armaments cooperation can enhance NATO's industrial base by advancing technology and high-technology skills of the labor force. This opportunity will provide tangible incentives for the Europeans to modernize their conventional force capabilities. We must also recognize that preventing technology transfer is a very important aspect of each cooperative arrangement. Each agreement includes provisions to protect this vital technology information. We must act, and the Europeans must act, to make armaments cooperation possible. A DSB study of industry-to-industry armaments cooperation found that cooperation is possible -- much of the regional industrial infrastructure is already in place -- but clear, unambiguous and consistent government support for arms cooperation is essential. This theme was reaffirmed by NATO in its recently completed study on armaments cooperation by the allies.

In 1985, NATO's organization for armaments cooperation, the Conference of National Armaments Directors (CNAD), took the significant step of aligning itself more directly with the Alliance's search for solutions to the key deficiencies identified by defense ministers. We believe that this can, and must, result in a more focused effort to make armaments cooperation directly relevant to Alliance needs. In addition, the allies are fully aware of the Nunn Amendment, which should serve to spur them and the United States to the allocation of hard resources to some specific cooperative programs which will enhance Alliance capabilities. They are also aware that the Nunn Amendment requires a real sharing of the burdens and benefits of these programs. In addition, our allies appreciate the significance of the Quayle (formerly Stratton-Holt) amendment which allows the waiver of some provisions of US law for joint programs. This change will allow the United States and its allies to cooperate more on the basis of equal partnership.

INFORMATION PROGRAM

The US mission to NATO (US-NATO) and American embassies in NATO capitals conduct active public information programs in support of US Government political and security objectives, including those related to burdensharing issues. The ambassador and other senior mission representatives meet regularly with European and American news correspondents. They give public presentations and participate in seminars and symposiums on defense issues throughout Western Europe and the US. Each year US-NATO sponsors two major "regional" seminars, which include opinion leaders from Western Europe and from the US, on the most urgent security issues of the day. Regular "Euronet" satellite press conferences on defense and foreign policy themes are offered to the large international press corps in Brussels. The US-NATO ambassador and senior US-NATO officers brief 35 to 40 groups of European opinion leaders invited to NATO Headquarters each year. This briefing program is managed jointly by USIA, US-NATO and US armed forces public affairs offices throughout Europe in collaboration with US embassies in fifteen NATO capitals. In addition, US-NATO officers explain the European-American defense relationship to thousands of official and non-official visitors to NATO Headquarters annually.

BURDENSARING AND THE NATO MILITARY AUTHORITIES

The US Delegation to the Military Committee (USDELMC) represents the Joint Chiefs of Staff at NATO Headquarters, and the US military representative to the military committee (USMILREP) heads the USDELMC. As is the case for US-NATO, USDELMC deals with the allies on a multilateral basis and is also involved in the burdensharing issue on many fronts.

Much of the work of the military committee parallels that of the North Atlantic Council and the Defense Planning Committee. Regular formal and informal meetings of allied MILREPS, annual appraisals of allied military capabilities and performance and force proposals provide opportunities to deal with burdensharing issues.

CIVIL EMERGENCY PLANNING

Civil emergency planning efforts accelerated during 1985, bolstered by renewed emphasis on the overall program. This conventional defense improvement (CDI) effort lent itself readily to the fruits of the years of comprehensive organizational work, detailed planning and extensive training that has already been quietly accomplished by the civil side of NATO. The intensified concentration on identifying areas of mutual concern with other elements of the NATO structure and the search for ways to complement the work of the force planners, resulted in new impetus for on-going work and several important new initiatives.

In the NATO civil planning process (which includes integral participation by US officers charged with the implementation of carefully orchestrated inter-agency guidance derived from the Departments of State, Defense, Commerce, Transportation, Energy and Agriculture, as well as the National Communications System and the Federal Emergency Management Agency), NATO civil planners are looking beyond the finite requirements of the rapid reinforcement plan (RRP) to questions of supply, resupply and sustainability. Planners are making a concerted effort to examine total civil and military requirements in order to ensure that all facets of civil emergency planning are satisfactorily accomplished. These include (1) maintenance of the machinery of government and its capability to deal with a crisis, and assurance of its continued functioning in wartime, (2) support and protection of the civil populations; and (3) civil support to the members of the Alliance and to the military by means of mobilization and use of allied civil resources and infrastructure. This broader look at civil requirements, as well as at purely military requirements, is essential in helping to underpin the political will of the Alliance and to prevent any distraction from mobilization in a crisis by "butter versus guns" arguments.

Specifically under the CDI program, and using the existing organizational structure of NATO, the civil emergency planners have undertaken the following:

- Continued efforts to obtain the commitment of civilian passenger aircraft to support the reinforcement of Europe.

- Continued efforts to obtain the commitment of long-range cargo-capable civil aircraft of member nations, and investigation of methods to optimize the use of combination passenger/cargo aircraft.
- Efforts to revise restrictive safety criteria that would allow highly capable new twin-engine civil aircraft (B-767, Airbus A-300 and Airbus A-310) to be used for Alliance airlift.
- Examination of the possible use of civil short takeoff and landing (STOL) aircraft and civil helicopters in support of the needs of members of the Alliance and military operations.
- The development of coordinated civil plans for air movements in support of the military and to meet the needs of Alliance members civil aviation services in crisis and war.
- Development of an Alliance container policy to ensure expeditious movement and interchangeability of containers in wartime.
- The completion of management systems to improve the reception and onward movement of reinforcements and the improvements of existing air and seaport facilities.
- The development of national arrangements to mitigate the negative effects of the use of flags of convenience and the employment of foreign crews in western shipping.
- The development of a civil organization for the coordination of land and sea transportation in the Mediterranean.
- The development of transport planning for the supply of Northern Europe in wartime.
- Further development of plans and arrangements to improve the effective use of civil and military medical support capacity.
- Identification of actual reserve inventories of combat rations, clothing and medical supplies currently held, and evaluation of production capability and reinforcement requirements.
- Completion of allied arrangements for reception and onward movement of ammunition, including plans to modify or waive national legislation regarding treatment of hazardous material.
- Assessment of total (civil and military) fuel, oil and lubricant demand in crisis and war, determination of shortfalls, and development of inland transportation plans including the use of civilian facilities and equipment.

Finally, two important study efforts are in progress under the conventional defense improvement effort:

-- First, the Industrial Planning Committee (IPC) ammunition study has been underway for several years now, and is developing highly useful data on the production and surge capacity of allied nations for five critical battle-decisive munitions.

-- Second, a new comprehensive study initiative has been launched under the direct supervision of the Senior Civil Emergency Planning Committee (SCEPC) to assess the supply and demand for merchant shipping in crisis and wartime.

While much of this peacetime civil-military planning is limited to promises from nations to provide resources and to take specific actions in response to a developing crisis, there are also some very tangible commitments of human and material resources. Key examples include the following:

-- Crisis Management Expertise. Depending on the crisis and which of the eight NATO civil wartime agencies (NCWAS) are activated, several thousand designees and consultants would move to predesignated operations centers to provide the expertise to handle defense shipping, and to coordinate inland surface transportation in Central and Northern Europe, and in the Mediterranean, civil aviation, wartime oil requirements, food and industrial supplies, wartime insurance, and refugee movement. These individuals, many of whom are senior officials of allied corporations and/or government agencies, are well-versed in their technical specialties, hold the requisite security clearances, have been trained in NATO procedures, and are prepared to assume their crisis management or wartime duties on short notice. Permanent arrangements have been made to support three of these wartime agencies (western branches of shipping, oil, and food and industrial supplies) at a site in the US.

--- Shipping. Alliance member countries have committed most of their large ocean going merchant ships to the NATO shipping pool, currently numbering about 5500 ships, which will be managed by NATO's Defense Shipping Authorities (DSA) for the best use and benefit of the Alliance in time of war or common defense emergency. Additionally NATO nations have committed about 600 militarily suitable dry cargo ships (RO/RO, breakbulk, and container) to provide direct sealift support to the RRP. These vessels provide a general cargo capacity of nearly 12 million tons. A smaller number of product tankers and cruise ships, to be used as troop ships, have also been added to the sealift ship list. This is a dynamic commitment by nations and an automated record is maintained by Planning Board for Ocean Shippers (PROS) that is constantly updated to compensate for additions and losses to the merchant fleets of member nations.

--- Aviation. A significant number of civil passenger aircraft and cargo aircraft that are suitable for long-range strategic airlift have been committed by nations.

HOST NATION SUPPORT ARRANGEMENTS

The United States and most of its allies have made agreements under which US forces abroad obtain in peacetime (or would obtain in wartime) considerable amounts of support from their host nation. Depending on the situation, the host country, and the type of support, costs may be reimbursed by the United States or the host nation may provide the support gratis. In either case, host nation support (HNS) is a valuable contribution to burdensharing, as it reduces requirements for US combat service support forces, facilities, and supplies. In addition, by making use of assets already in the overseas theater, wartime HNS reduces demands on strategic lift capabilities and ensures that support will be available from the very earliest days of a war. Many European host nations also have similar arrangements with the other reinforcing nations such as the United Kingdom and Canada.

HNS arrangements are divided into peacetime HNS and wartime HNS. Peacetime HNS takes such forms as providing a supporting US bases, operating joint-use installations, providing or operating prepositioning facilities, and allowing US forces to use host nation training ranges. Wartime HNS (WHNS) generally covers a broader scope of activities. It can include areas like nuclear-biological-chemical (NBC) decontamination, base air defense, prisoner of war security, and battle damage repair as well as transportation, supply, and base support functions. As a rule, the US signs a general, or "umbrella," WHNS agreement with each host nation laying out the basic ground rules under which WHNS will be furnished. Technical agreements, subordinate to the umbrella agreement, address functional or geographic subsets of WHNS. Finally, implementing arrangements spell out specific quantities, procedures, and schedules. Additional bilateral mutual support agreements can provide a further element of flexibility by permitting logistics cooperation beyond that spelled out specifically in the HNS agreements.

Progress continues to be made in refining logistic support arrangements, policies, and procedures. USEUCOM has logistics coordination cells operating in Belgium, Italy, Luxembourg, the Netherlands, Norway, and the UK. Agreements and host nation capabilities are reviewed and refined and multinational planning is continually improving.

A more specialized arrangement dealing exclusively with logistics is the NATO Mutual Support Act (NMSA) of 1979 which established procedures to be followed by the US, NATO countries and NATO subsidiary bodies in acquiring logistics support, supplies and services when deployed in Europe and adjacent waters. The Act provides an element of flexibility by permitting the issuance of implementing arrangements which further define it. Such agreements have been signed with Belgium, Denmark, Norway, Germany, Canada, the Netherlands, Italy, Luxembourg, United Kingdom, Spain and the NATO Maintenance and Supply Organization (NAMS0).

PEACETIME HOST NATION SUPPORT

The most common peacetime HNS efforts are associated with US overseas bases. Some of the usual specific types of support to these installations are:

- rent-free or reduced price real estate, including family housing.
- real property maintenance, facility improvements, utilities, and other base operating support.
- use of test and training ranges.
- air traffic control, navigation aids, etc., at joint-use airfields and comparable services at other joint installations.

In addition, many allies provide other forms of peacetime HNS, such as:

- permitting allied exercises in training areas and on private and public land, and assuming at least part of the costs of maneuver-related civilian casualties and damage.
- providing storage facilities for ammunition, POL, and other prepositioned equipment and supplies and, in some cases, operating these facilities.
- domestic infrastructure improvements (roads, ports, airports, railroads, etc.) in anticipation of wartime requirements, and permitting use of such infrastructure for peacetime force and materiel movements and providing necessary supporting labor.

Although there are no formal HNS agreements between the US and Japan, Japan's actual voluntary peacetime HNS contributions are significant and studies under the US-Japan Guidelines for Defense Cooperation of 1979 on potential wartime HNS are ongoing. Contributions are in the area of peacetime HNS, where Government of Japan direct and indirect monetary support for US forces amounts to over \$1 billion annually or \$1.18 billion in JFY 85 (1 April 1985 - 31 March 1986). Of the JFY 85 amount, about 69.8 percent was Government of Japan budgeted and 30.2 percent non-budgeted cost avoidance. Budgeted support items amounted to about 5.3 percent of the \$15.3 billion Japanese defense budget. Major categories of support were (1) facilities - \$571, (2) land - \$435.4 million, (3) labor - \$102.2 million, and (4) miscellaneous (waived taxes on petroleum products, local procurement, customs, road tolls, landing and port charges, and claims) - \$120.3 million. Facilities Improvement Program (FIP) represents a firm Government of Japan commitment to support US forces in Japan. FIP construction has centered on quality-of-life projects such as family and bachelor housing, recreational facilities, sewage and water treatment facilities, etc., has contributed greatly to the improvement of morale among US personnel stationed in Japan. Moreover, direct operational support facilities, such as the construction of hardened aircraft shelters, have been included in recent FIP budgets, although it is expected that emphasis will continue to be given to housing and quality-

of-life projects. Owing to this voluntary GOJ program which began at \$100 million in 1979 the US has an excellent base structure in Japan which greatly aids US capability to defend its own and allied interests in the Far East and has greatly improved the morale of US Forces stationed in Japan.

Million Dollars

JFY 81	148.6
JFY 82	185.9
JFY 83	228.6
JFY 84	285.9
JFY 85	287.3
JFY 86	350.4

The Government of Japan (Req'd) labor cost sharing program helps pay approximately 17 percent of the salaries and other costs associated with maintaining the over 21,000 member US Forces Japanese labor force. Costs are paid out of the Defense Facilities Administration Agency (DFAA) budget except as noted.

Million Dollars

	JFY 83	JFY 84	JFY 85	JFY 86 (Req'd)
Labor cost sharing	76.8	81.7	87.9	93.2

WARTIME HOST NATION SUPPORT

The structure and content of WHNS arrangements vary widely from country to country. Nevertheless, some generic types of arrangements exist with numerous allies.

Lines of Communication (LOC). LOC agreements provide for the US to make use of seaports, airports, roads, railroads, and inland waterways to deploy reinforcing units through the host country and to ship materiel through the host country for their support. Host nations provide access to this transportation system as well as, for example, ancillary services such as billeting, messing, medical care, communications, security, cargo-handling, and ship and aircraft servicing; the use of such equipment as rail cars, trucks, forklifts, aircraft refuelers, and barges; supplies such as fuel, food, clothing, spare parts, and medical supplies; necessary areas and facilities for staging and marshalling forces and materiel; and supporting labor. For example, the US currently has host nation support agreements with the United Kingdom to provide the use of facilities and resources during wartime. Under these agreements, the HNS program identifies and fills US operational shortfalls with UK national resources to support US forces. The US continues to work with the UK in a joint planning forum to refine the requirements and to establish specific plans to implement HNS.

Collocated Operating Bases (COBs) and Other Military Airfields. The COB program was developed in the early 70s as a follow-on project for support of US reinforcing air squadrons. The program continues to offer substantial savings to the US. Over 70 bases in Europe have been identified to support USAF CONUS-based reinforcements in addition to the existing 22 main operating bases (MOBs) and six standby dispersal bases (SDBs).

Similar arrangements also exist for wartime operations of US naval aviation, including Marine aircraft groups (MAGs) and maritime patrol aircraft (MPA) squadrons. COBs and similar bases require considerable US and host nation planning and investment in peacetime. Since COBs are normally active peacetime bases of the host nation's air force, the host nation would provide virtually all the necessary infrastructure, base operating support, and airfield services. Construction of additional facilities needed to support US squadrons (e.g. aircraft shelters, runway repair material, additional quarters) is funded through the NATO common infrastructure program, by the host nation, or jointly by the host nation and the US.

- Support Forces. Several WHNS Agreements call for host nations to provide organized military and civilian units to provide combat service support to US forces. An example is the German WHNS agreement which calls for some 93,000 military reservists in 173 units to perform wartime logistics functions for US forces. These include transportation, casualty evacuation, and NBC defense battalions; security and maintenance and service companies; airfield damage repair platoons; medical squadrons; and escort batteries. These reserve units also have their own command and control structure. The US and Germany are sharing the costs of equipping these units and providing the necessary infrastructure for them. In addition, Germany has agreed to provide a substantial number of civilian personnel for other support tasks.

- Other Wartime Host Nation Support. The allies' HNS efforts, as noted above, extend into a number of areas that cannot easily be categorized. Some of these are listed below.

-- Exemption from military service obligations for civilian personnel providing essential wartime support to US forces.

-- Mobilization of foreign nationals employed by the US in peacetime into the WHNS units performing the same services.

-- Arranging for procurement of supplies or furnishing supplies directly from the host nation economy (e.g., Netherlands guarantees to provide bunker fuel for strategic sealift vessels offloading in Dutch ports).

-- Providing general labor support.

-- Medical treatment and evacuation.

-- Direct support of deployed forces in areas such as messing, clothing, laundry, etc.

-- Naval base facilities including berths and moorings, pilots, ship repair facilities, supply operations, tugs lighterage, cargo handling, fuel and provisions, etc.

Japan's Wartime HNS. The US-Japan Guidelines for Defense Cooperation, 1978, provide for the conduct of studies which could, in the future, result in HNS agreements: however, the premises of the guidelines state that the conclusions of these studies will not be such as would place either government under obligation to take legislative, budgetary or administrative measures. Thus, formal, binding agreements would be possible only after the passage of emergency legislation in Japan. Meanwhile, two categories of studies are ongoing. They include (1) studies for the defense of Japan, and (2) studies to determine what support Japan might provide the US in the event of a Far Eastern contingency outside of Japan, known as facilitative assistance (FA) studies. Although these studies may not necessarily result in peacetime savings to the US government, the planning involved serves most with a clearer understanding of what support might be available in a contingency and the mechanics of providing it.

JAPANESE PERFORMANCE TOWARD ACHIEVING SELF-DEFENSE (INCLUDING SEA-LANES TO 1,000 MILES)

In September 1985, Japan's Government approved a long range defense program, the first in over fourteen years. The National Defense Program Outline (NDPO) was adopted by the Government of Japan (GOJ) in 1976, and Standard Force Levels estimated to be adequate at that time for Japanese defense roles of resisting a limited invasion and of cooperating with the United States against more serious threats were established in a table attached to the NDPO. Defense of the sea-lanes to 1,000 miles was clarified by Prime Minister Suzuki in 1981 as being included in Japan's roles. The force levels to achieve the roles were to be attained as quickly as possible; and the Japan Defense Agency (JDA) designed two rolling five-year programs, from 1980 to 1984, and from 1983 to 1987, in order to attempt to attain the required force levels. Since the percentage of Japan's large and rapidly growing GNP spent on defense in 1976 was 0.90 percent, it was felt that the Standard Force Levels could be met within one percent of GNP. Thus, to calm fears expressed by some voices in Japan and elsewhere in Asia that Tokyo's defense efforts might become excessive and spill over into offensive capability, a 1976 Cabinet policy decision was reached to hold defense spending within one percent of GNP "for the time being". The 1980-1984 and 1983-1987 defense programs did not have the status of pre-1976 "Defense Build-up Plans" which were approved by the Cabinet and the National Defense Council (NDC); instead these "Mid Term Defense Estimates" were merely JDA plans which Japan's powerful Ministry of Finance (MOF) felt no responsibility for and which were significantly underfunded owing to a slowdown in the growth rate in Japan's GNP in the 1980s which soon brought defense budgets increasing by over four percent annually into conflict with the still existent one percent limitation. The first three years of the 1983 to 1987 JDA plan were funded at only 60 percent of designed levels, at least partially because defense spending had reached 0.99 percent of GNP.

According to reliable Japanese media and political sources, Prime Minister Nakasone attempted but failed to remove the one percent of GNP limitation in September 1985, prior to adoption of the JDA's 1986-1990 plan; but he failed owing to political rivalries within the Liberal Democratic Party (LDP) rather than resistance to additional defense efforts. Although the GOJ did not abolish the domestically politically sensitive barrier, the 1986-1990 plan was elevated to the status of a GOJ plan approved by the Cabinet (including the MOF).

Although it was unnecessary to exceed one percent of GNP to fund the first year of the new plan fully, present estimates are that it will be necessary to exceed one percent of GNP in order to fund the complete plan. Almost simultaneously with the elevation of the new plan, the GOJ reconfirmed the position that the one percent limitation applied only to annual defense budget requests, and not to five-year defense plans, and that priority would be given to meeting the goals of the NDPO within the 1986-1990 plan rather than to maintaining the one-percent limitation.

The 1986 Cabinet-approved defense budget represents 5.4 percent real growth and due to five-year upward adjustment of GNP growth figure, again constitutes 0.99 percent of GNP. As indicated in the table below, the 1986 budget fully funds almost all major front-line equipment and combat readiness, training and sustainability items of the first year of

the 1986-1990 defense program. This high level of funding is a significant change from the two previous JDA five-year programs, and even from the last Government-approved program pre-1976, all of which were seriously underfunded. The 1986-1990 plan provides the likelihood, if the follow-on years are fully funded, that the Standard Force Levels of 1976 will be met, and that meaningful increases in combat readiness and sustainability which are included in the 1986-1990 plan will also be realized.

<u>ITEM</u>	<u>Required to Achieve 20% OF 5-YR PLAN</u>	<u>APPROVED</u>
TANKS	50	56
ARTILLERY	55	55
ANTI-TANK HELO (AS-1S)	8	8
TRANSPORT HELO (CH-47)	7	7
DESTROYERS	2	3
SUBMARINES	1	1
ASW PATROL A/C (P3C)	10	10
ASW HELO (LAMPS MK III)	13	13
MINESWEEPING HELO (MH-53)	2	4
FIGHTERS (F-15)	12	12
TRANSPORTS (C-130)	1	2
AEW AIRCRAFT (E2C)	1	0

Other items of interest:

Ammunition Outlays	13.8% increase over 1985
R&D Funding	12.9% increase over 1985
Facilities for U.S. Forces	\$350 million (up from \$287 million in 1985)

Per Section 812 of the Conference Report accompanying the Department of State Authorization Act, a report to Congress of Japan's progress in implementing a 1986-1990 defense plan to achieve 1,000-mile self-defense capabilities is required. As mentioned above, unlike the first year of the two previous five-year programs, the required first year share of the 1986-1990 Japanese defense plan has been approved by the Cabinet. In addition, the plan calls for the study of an Over-the-Horizon Radar (OTHR) system, air defense at sea, and in-flight refueling functions. Any or all of these improvements could significantly enhance Japanese defense capabilities within 1,000 miles, thus causing no serious domestic or international concerns. Also, Minister of State for Defense, Koichi Kato, who -- in an unprecedented move by Prime Minister Nakasone designed to show the international community in general, and the United States in particular, that Japan is serious about the defense issue -- was reappointed to a second term in late December 1985, has testified in the Diet that the Standard Force Levels listed in the 1976 NDPO are to be interpreted flexibly, depending on the threat.

Given the contents of the 1986-1990 program -- both in front-line equipment and in rear support (combat readiness and sustainability) items --, the force multiplier items such as OTHR and in-flight refueling which are being studied and which could either be incorporated into or added on to the 1986-1990 program, and the flexibility to adjust the Standard Force Levels of the NDPO to the evolving nature of the threat, the Administration believes that the 1986-1990 program, if continued on the route to full funding, represents the necessary minimum to meet Japan's defense goals, including defense of the sea-lanes to 1,000 miles. The necessity to fund the entire 1986-1990 program fully, rather than to merely make a token gesture towards full funding in 1986, to follow-up on the results of studies of force multipliers presently on-going, and the necessity to adjust future Japanese efforts flexibly in response to advances in the threat Japan faces as changes in the threat occur cannot be over-emphasized. Nonetheless, Japan's 1986-1990 defense program does represent an appropriate, significant step forward in achieving Japan's defense goals.

Future reports in accordance with Section 812 of the Conference Report will monitor Japanese progress towards continuing on a realistic path to achieving its defense goals, progress which both the Governments of Japan and the United States favor.

APPENDIX A

ADDITIONAL BURDENSARING DATA

This appendix provides a detailed comparison of US and allied efforts for the following burdensharing indicators: gross domestic product (GDP), population, per capita GDP, per capita defense spending, and defense spending by resource category. Also included are tabular breakouts for all of the major burdensharing indicators discussed in Chapter II and this appendix.

This material supplements and should be examined in conjunction with the "Burdensharing Measures and Performance" section of Chapter II.

GROSS DOMESTIC PRODUCT (GDP)

Charts A-1 and A-2 show the total GDP of each of the NATO nations and Japan along with each nation's share of the NATO and Japan total. GDP reflects the total value of all goods and services produced within the national borders of a country in a given year and, thus, is a good indicator of the magnitude and rate of growth of a country's economy.

The magnitude of GDP varies greatly among the nations surveyed ranging in 1984 from \$3 billion for Luxembourg to \$3.6 trillion for the United States. As a percentage of the NATO and Japan total, the US share amounted to 48 percent in 1984--a slight decline from the level of the early 1970s. ^{1/}

The US share of GDP is substantially greater than that of any other nation. Japan, the second-ranking nation, accounts for only 15 percent of the total and Germany, the third in rank, for 8 percent.

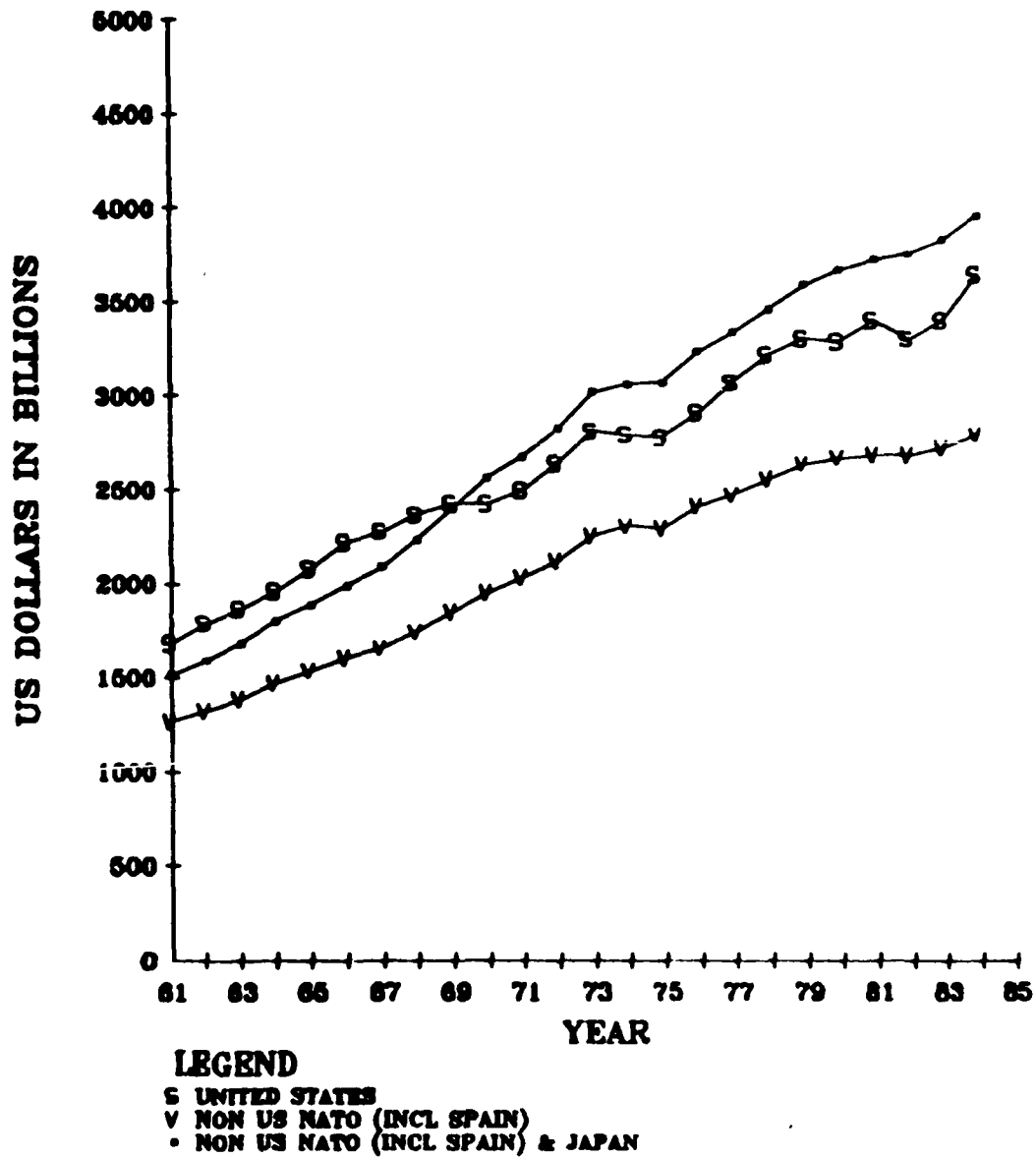
Among the non-US NATO nations, Germany, France, and to a lesser degree, the United Kingdom dominate the field, with Italy following close behind. Canada, Spain, The Netherlands and Belgium are clustered somewhat further down the scale, with shares in the 1 to 4 percent range, while the remaining six NATO nations (Denmark, Turkey, Norway, Greece, Portugal, and Luxembourg) account, individually, for less than 1 percent of the total and as a group, for only 3 percent.

An examination of real GDP growth provides some interesting insights into economic activity during the past decade. Between 1971 and 1984, US real GDP grew by 46 percent, compared with around 37 percent for the

^{1/} All share figures were computed using constant 1984 prices and 1984 exchange rates.

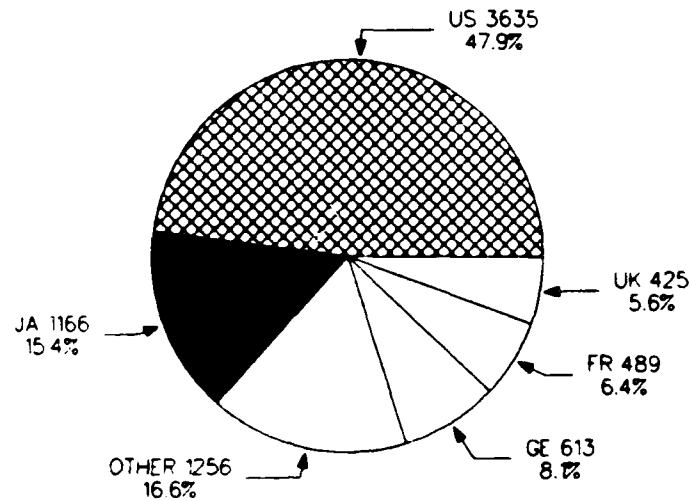
CHART A-1

**TOTAL GROSS DOMESTIC PRODUCT
US DOLLARS IN BILLIONS
(1984 CONSTANT DOLLARS - 1984 EXCHANGE RATES)**

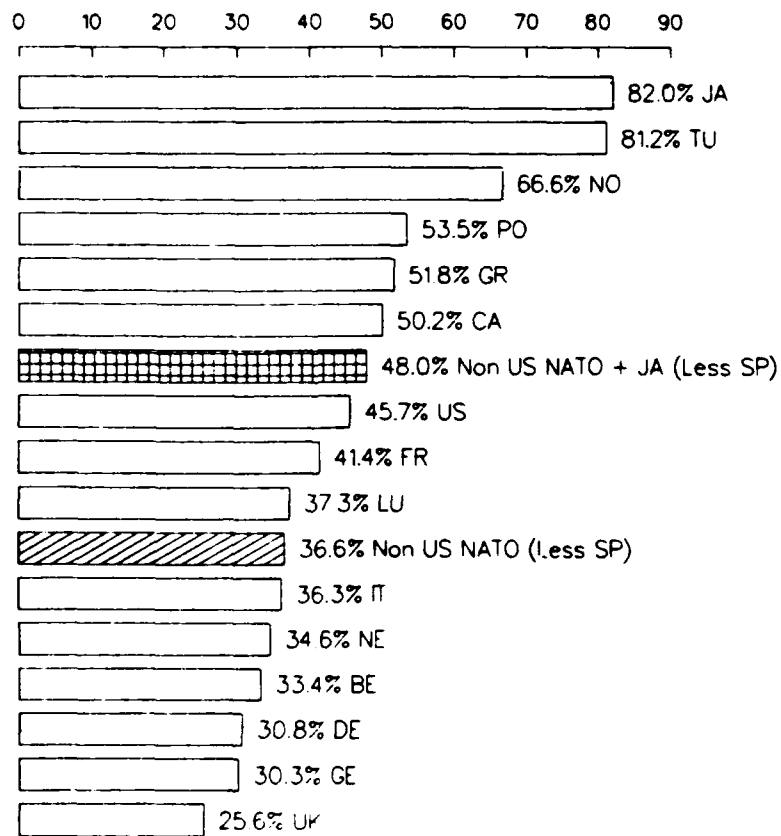


CHAPT A-2

GROSS DOMESTIC PRODUCT
(1984 CONSTANT DOLLARS IN BILLIONS - 1984 EXCHANGE RATES)
1984
TOTAL NATO & JAPAN: 7584



% CHANGE IN GROSS DOMESTIC PRODUCT (1971 VS 1984)



on-US NATO nations and an impressive 82 percent for Japan. Among the non-US NATO nations, five countries--Turkey, Portugal, Norway, Canada, and Greece--achieved growth rates of higher than 50 percent, while the United Kingdom, with a 25 percent increase, lagged behind all the nations. Denmark and Germany--countries that are typically perceived from this side of the Atlantic as having highly prosperous economies--managed real increase for 1971-84 of around 30 percent, placing them close to last in real GDP growth during the 1970s and early 1980s.

POPULATION

Charts A-3 and A-4 compare the mid-year population size of the various nations and, thus, provide an indication of the human resources available to each. Population counts are relevant to defense burdensharing analyses for two reasons. On the one hand, they give a rough indication of the size of the pool from which a nation must draw its defense manpower. From this standpoint, a large and fast growing population would be a positive sign. On the other hand, they indicate the extent to which defense may have to compete with other programs for fiscal resources. By this standard, a large and growing population could mean additional requirements for those government services and consumer goods that compete with defense for taxpayers' dollars and for industrial capacity.

The results for this indicator exhibit many of the same general patterns as those of GDP. As with GDP, this measure varies widely across nations, the range in 1984 extending from 0.4 million for Luxembourg to 237 million for the United States.

The US figure translates to 31.5 percent of the NATO and Japan total--roughly double the 15.9 percent share of Japan, the second most heavily populated country. Germany, which ranks third, supplies 8.1 percent of the total and is followed closely by Italy, the United Kingdom, and France, which account for 7.6 percent, 7.5 percent, and 7.3 percent, respectively.

Although the total percentage change in population growth between 1971 and 1984 varies from -0.2 percent for Germany to 34.5 percent for Turkey, there have been no dramatic changes in national shares of the total over the 14-year period.

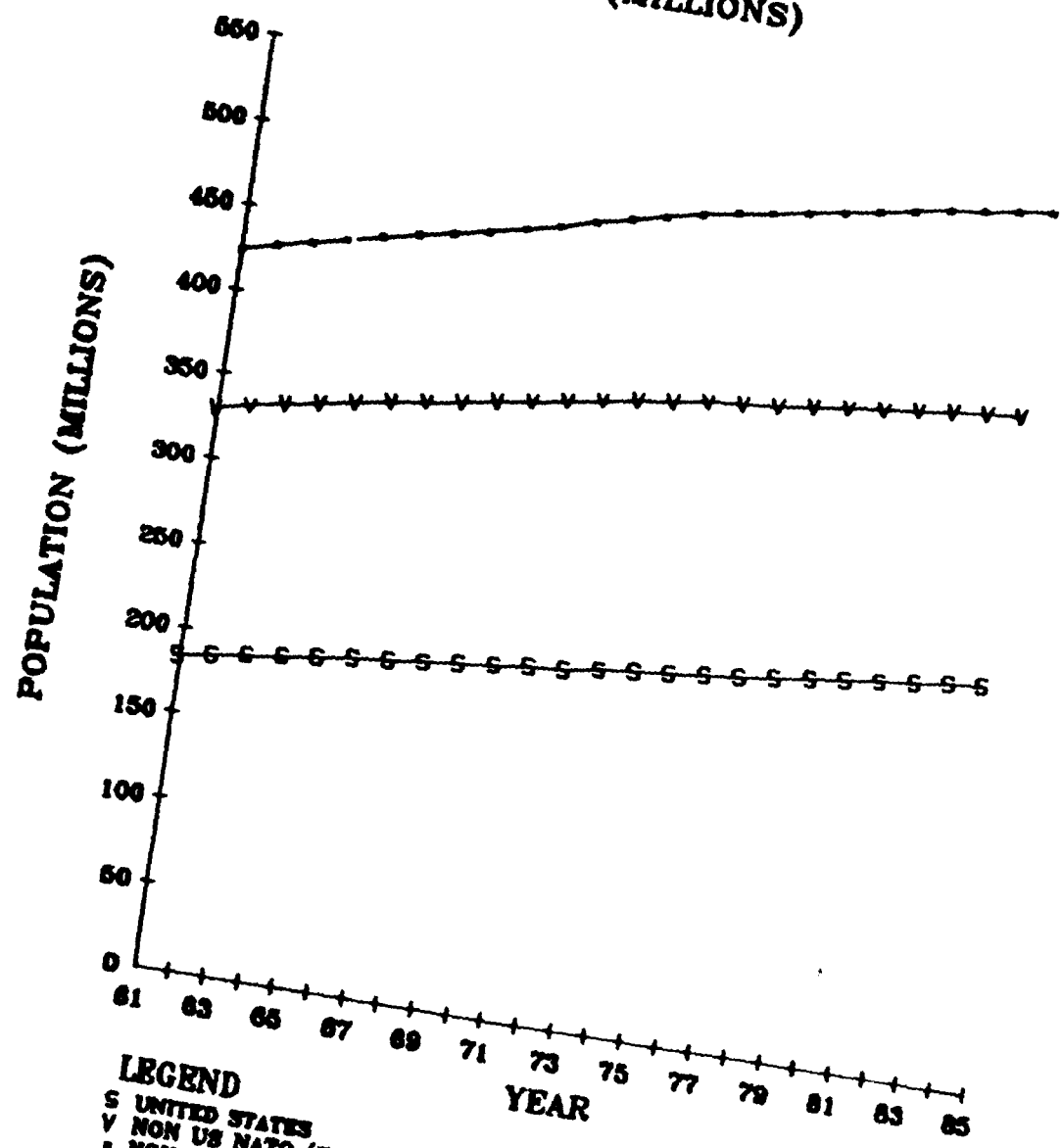
PER CAPITA GROSS DOMESTIC PRODUCT

Per capita GDP (total GDP divided by total population) is a widely accepted measure of economic development and standard of living. This indicator recognizes that although a nation's total GDP may be relatively large and rapidly growing, if its population is also large and fast growing it may not be able to generate sufficient national income to provide for the needs of the populace.

A review of the trends (Charts A-5 and A-6) reveals a fairly clear-cut distinction between the "haves" and the "have-nots," or perhaps more accurately, the "have lesses." Most of the Northern and Center Region nations are clustered relatively close together at the top of the range, with per capita GDPs from around \$9,000 to \$14,000.

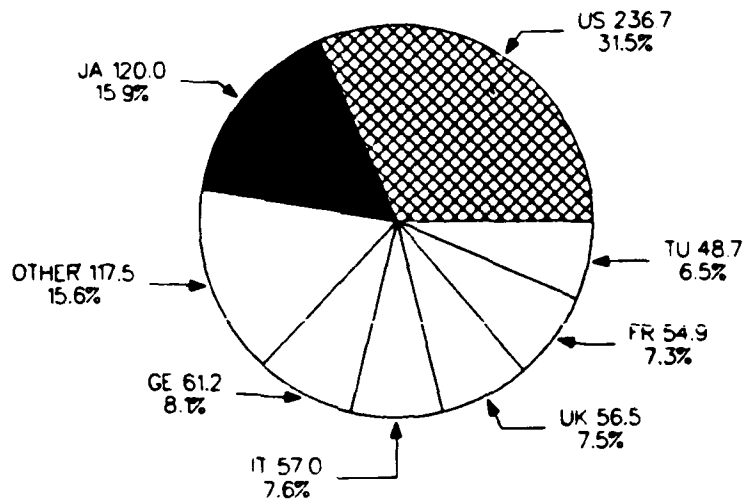
CHART A-3

TOTAL POPULATION
(MILLIONS)



LEGEND
S UNITED STATES
v NON US NATO (INCL SPAIN)
• NON US NATO (INCL SPAIN) & JAPAN

CHART A-4
POPULATION
(IN MILLIONS)
1984
TOTAL NATO & JAPAN: 752.5



% CHANGE IN POPULATION (1971 VS 1984)

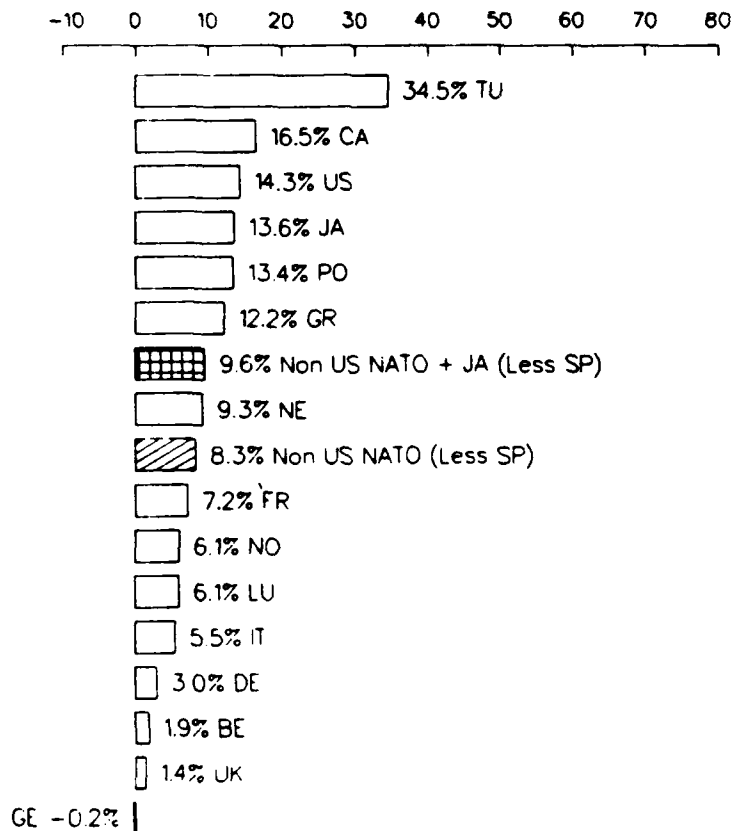


CHART A-5

GROSS DOMESTIC PRODUCT PER CAPITA

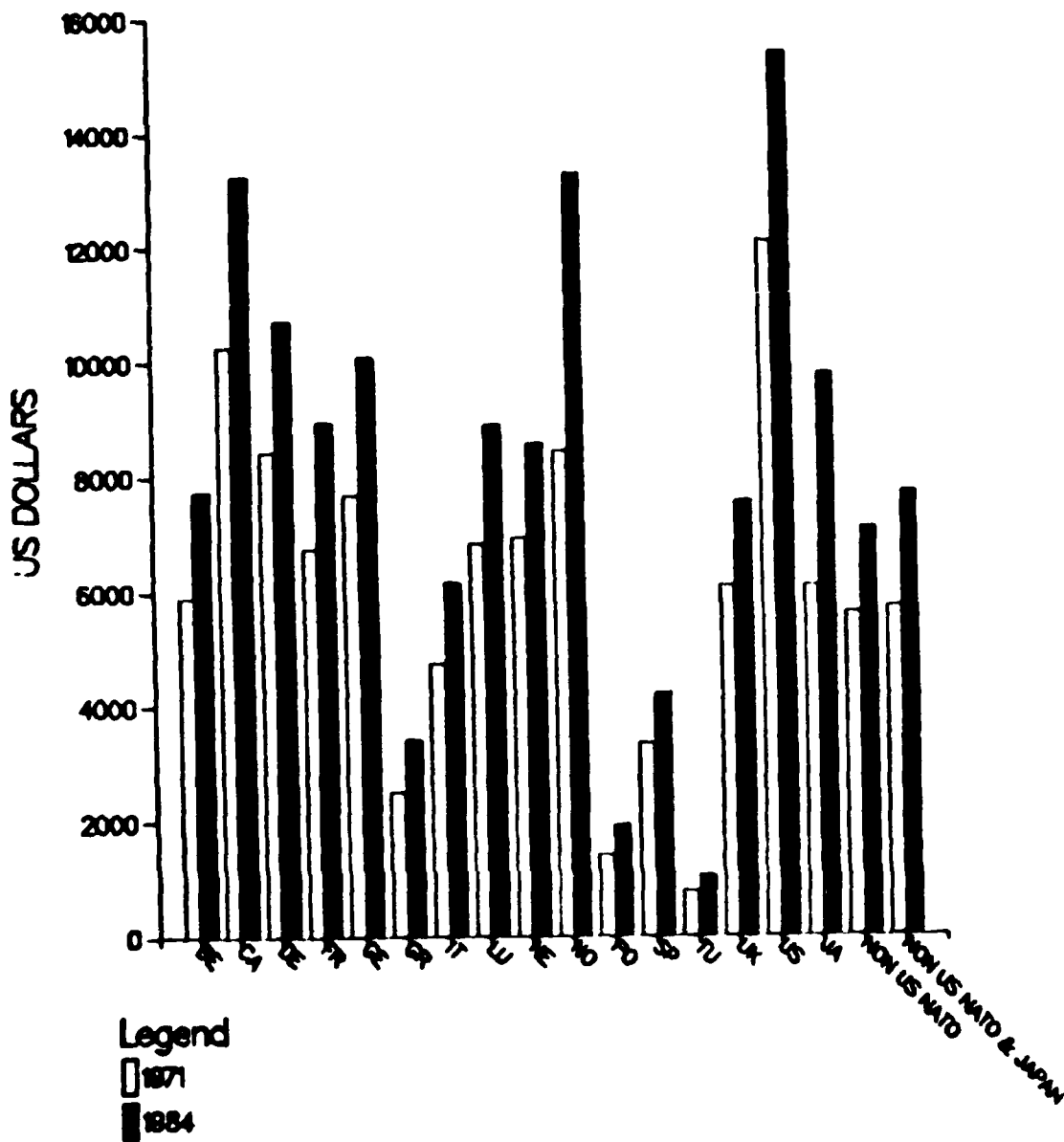
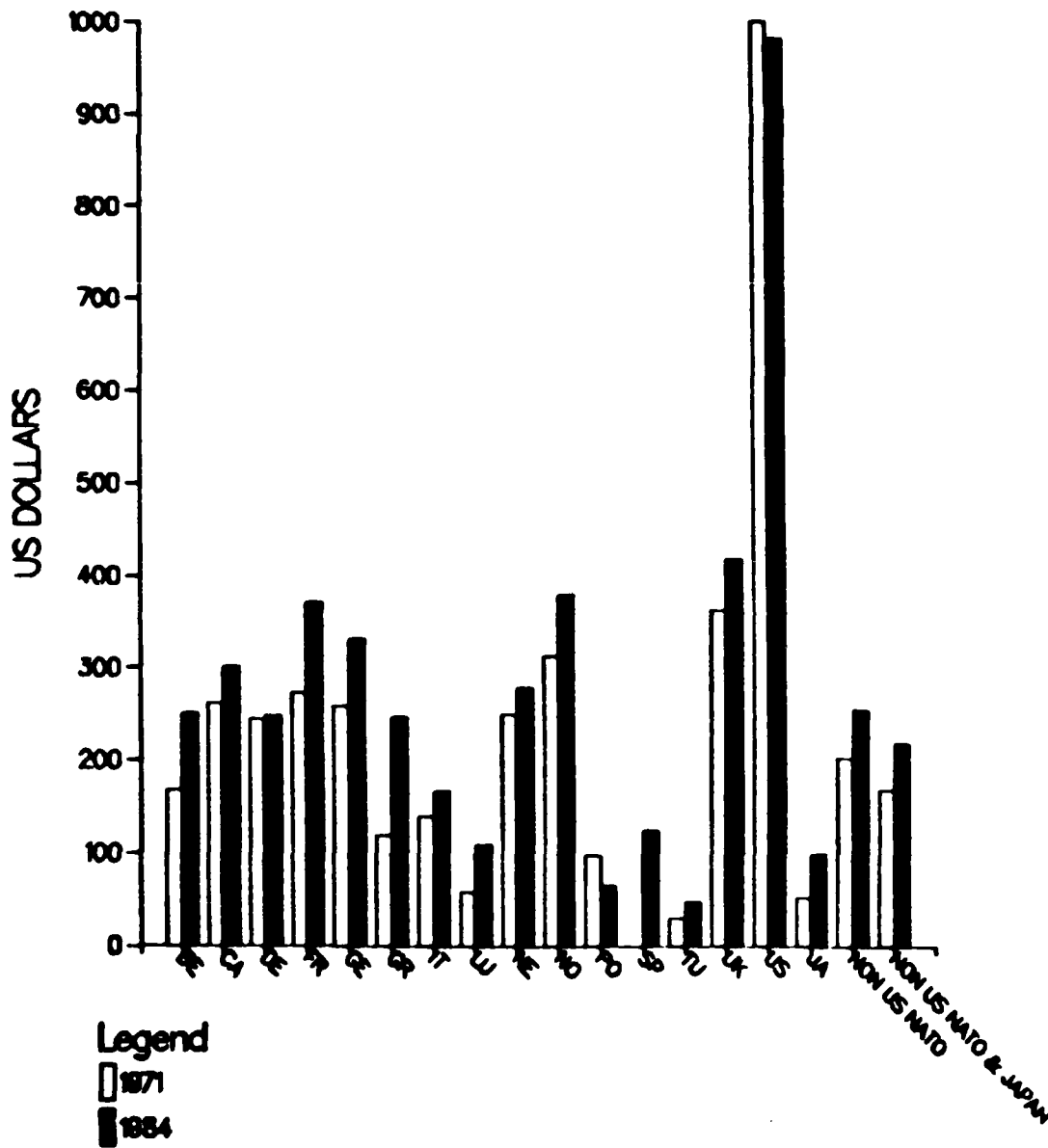


CHART A-6

DEFENSE SPENDING (FY) PER CAPITA



Among the top-ranking countries for this indicator, the United States places first with a per capita income of \$15,356, followed by Canada, Norway, Denmark, and Germany, with per capita incomes ranging from \$13,220 to \$10,022. The United Kingdom, with a per capita income of \$7,518, ranks lowest of all the Northern and Center Region nations.

NATO's Southern Region members occupy the bottom rungs for the Alliance's per capita GDP ladder. Per capita national income among these nations ranges from \$6,114 for Italy (twelfth among the countries) down to \$1,023 for Turkey (last in the Alliance).

Between 1971 and 1984, the greatest increases in per capita GDP were achieved by Japan and Norway, (60 percent and 57 percent, respectively). The Netherlands, and the United Kingdom, with increases of 23 and 24 percent, respectively, showed the smallest improvement.

TOTAL DEFENSE SPENDING PER CAPITA

This indicator relates a nation's defense spending to its population size. Although widely used, the measure is difficult to interpret and subject to misunderstanding. Whereas total population may be a good basis for comparing manpower contributions, it is not immediately obvious why it should be a reasonable basis for determining whether nations' total defense contributions are equitable. That is, a nation with a large population may not necessarily have more funds to devote to defense than does a country with a smaller population. For example, Turkey's GDP is roughly equal to Norway's, but its total defense spending is about one-and-a-half times greater (Chart A-6). Yet, because its population is more than ten times larger than Norway's, Turkey appears (on the basis of the per capita defense spending measure) to be making a substantially smaller contribution than is its northern flank ally.

TOTAL DEFENSE SPENDING BY RESOURCE CATEGORY 2/

Charts A-7 through A-10 show how the United States and its allies allocate their defense spending among major resource categories, such as personnel, procurement of major equipment and ammunition, and research and development (RDT&E). The data represent actual or estimated outlays, adjusted to conform to a definition agreed to by NATO on what is to be included in each resource category.

2/ This section addresses trends through 1984. Information available on allied spending by resource category for 1985 and beyond is not sufficiently refined to enable us to provide firm figures for those years. Based on preliminary data, we are inclined to believe that the patterns exhibited in prior years will not change drastically during 1985 and 1986.

Since the mid-1970s most of the allies have been allocating a growing share of their defense spending to capital expenditures, thereby reversing a downward pattern that existed during the late 1960s and early 1970s. The share allocated to capital by the non-US NATO nations as a group declined from 30 percent in 1967 to 23 percent in 1971, and then increased to between 32 and 33 percent during the early 1980s (Chart A-7). A similar pattern is exhibited for procurement of major equipment and ammunition--the largest component of capital expenditures. This category declined from 19 percent in 1967 to 14 percent in 1971, and then gradually increased to 21 percent in 1980, 22 percent in 1981 and 1982, and 23 percent in 1983 and 1984. By contrast the US capital percentage fell from around 41 percent in 1968 to 30 percent in 1975, reflecting in part the Southeast Asia phasedown. The share remained in the neighborhood of 30 percent during 1975-78 and then moved upward to 38 percent in 1984.

The allied personnel percentage (which includes military and civilian pay and allowances and military pensions) increased from around 45 percent in 1967 to 55 percent in 1974, but has declined to 45 percent since then (Chart A-8). The personnel share of US defense spending climbed from 38 percent in 1968 to 50 percent in 1973, remained in the range of 50 to 52 percent during 1973-78, and then declined to 40 percent in 1984.

The allied percentage allocated to "other operating" expenditures (which encompasses all operations and maintenance expenditures less military and civilian pay allowances) dropped from one-quarter of total defense spending in 1967 to 21 percent in 1973. Since 1973, the share has remained between 20 and 23 percent. US expenditures in this category dropped from 21 percent to 17 percent of total spending between 1968 and 1969, held steady at around 16 percent to 18 percent between 1970 and 1974, and then gradually increased to the 22-25 percent range during 1980-84.

Charts A-9 and A-10 compare the percentage of 1984 defense outlays allocated to each resource category by the United States, selected allies, and all of the allies combined (excluding, as indicated earlier, France, Greece, Japan, Luxembourg, Spain, and Turkey).

As Chart A-9 shows, the British lead all the NATO nations in the percentage of total defense spending devoted to capital expenditures. The United Kingdom's allocation of 45 percent is followed by 38 percent for the United States, 32 percent for The Netherlands, 29 percent for Canada and Germany, 28 percent for Turkey and Norway, and roughly 20-22 percent for most of the other nations.

Germany's percentage for major equipment and ammunition (19.6 percent) is relatively low vis-a-vis the percentage of the United States and the United Kingdom and several other nations. This appears to be attributable in part to Germany's relatively greater emphasis on labor-intensive ground forces and its relatively modest emphasis on capital-intensive naval forces.

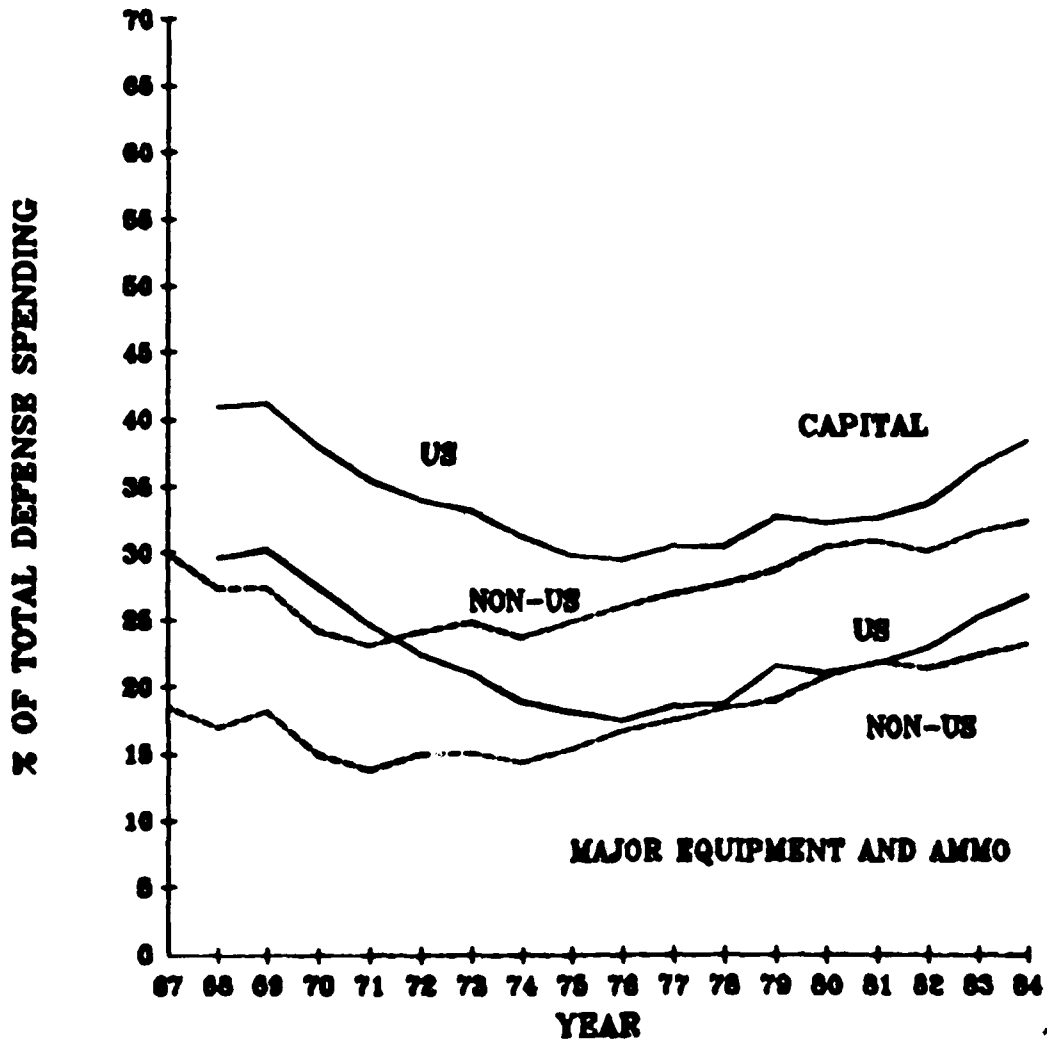
Canada's capital percentage figure was one of the lowest recorded in NATO during the 1970s, reflecting years of inaction regarding major equipment replacement needs. The picture has become brighter, however, thanks to a long-range improvement program. Under this plan, the Canadians have acquired or are acquiring new maritime patrol aircraft, tanks, and combat aircraft. As a result, the capital percentage has increased from less than 15 percent in the mid-1970s to more than 29 percent in 1984.

British spending for RDT&E has, for most years since the early 1950s, been the highest or second highest in NATO as a percentage of total defense spending.

The share of total spending allocated to personnel ranges from over 60 percent for Belgium and Portugal to 34 percent for the British. Both the United States and Germany allocate less than half of their budgets to this category (40 percent and 46 percent, respectively.) The weighted average for all the non-US nations (excluding France, Greece, Japan, Luxembourg, Spain, and Turkey) is 45 percent.

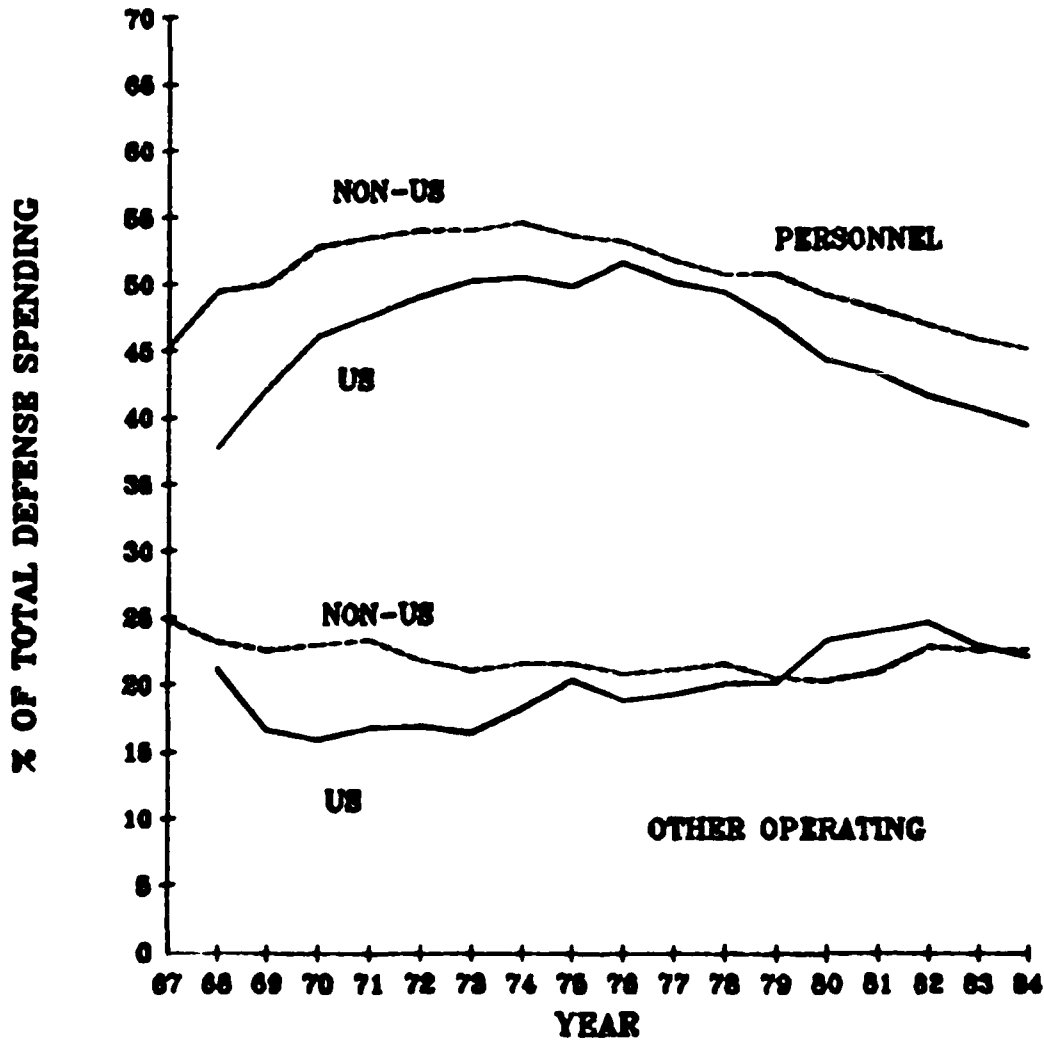
CHART A-7

**US AND NON-US NATO SPENDING FOR
CAPITAL AND MAJOR EQUIPMENT AND AMMUNITION
(% OF TOTAL DEFENSE SPENDING)**



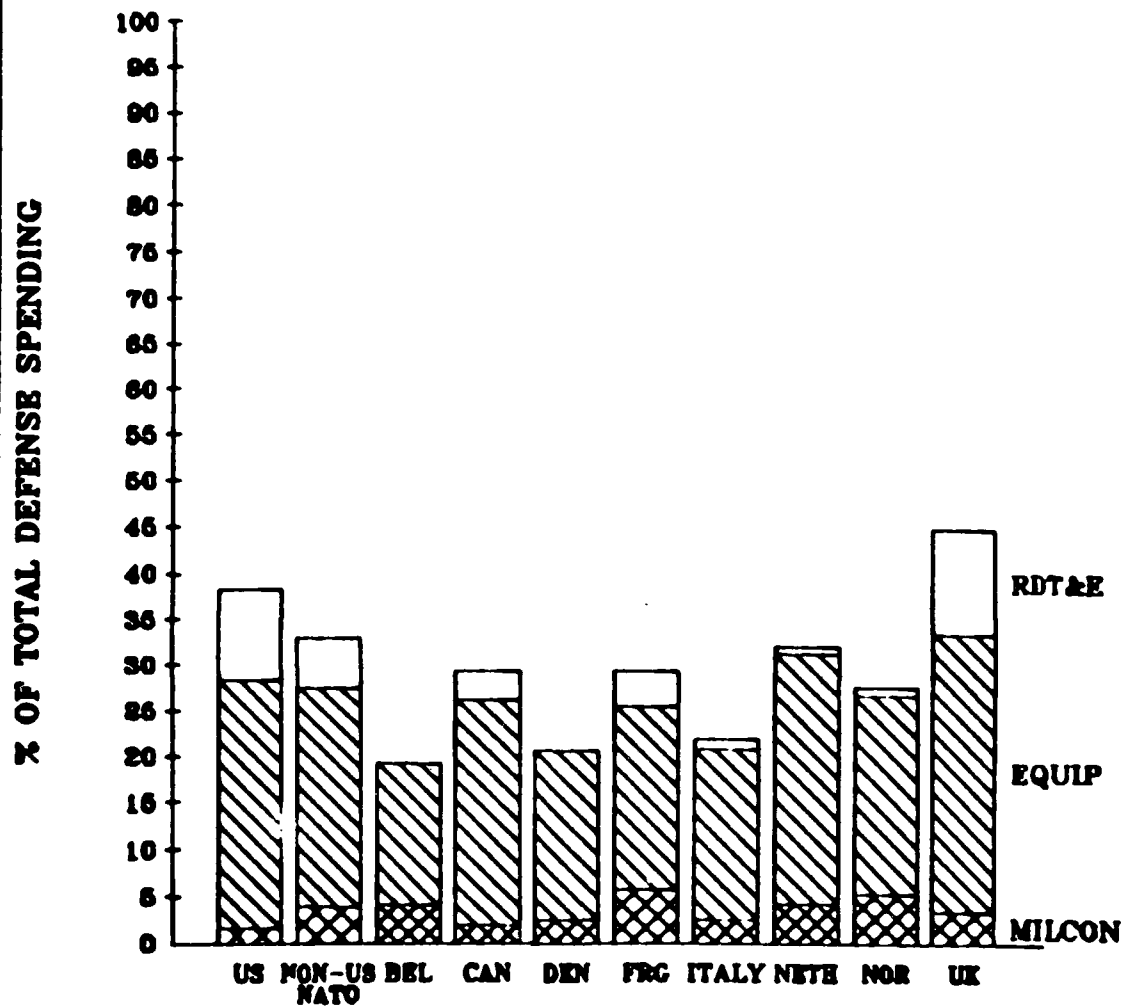
Excludes FR, GR, LU, TU, SP

**US AND NON-US NATO SPENDING FOR
PERSONNEL AND OTHER OPERATING EXPENDITURES
(% OF TOTAL DEFENSE SPENDING)**



Excludes FR, GR, LU, TU, SP

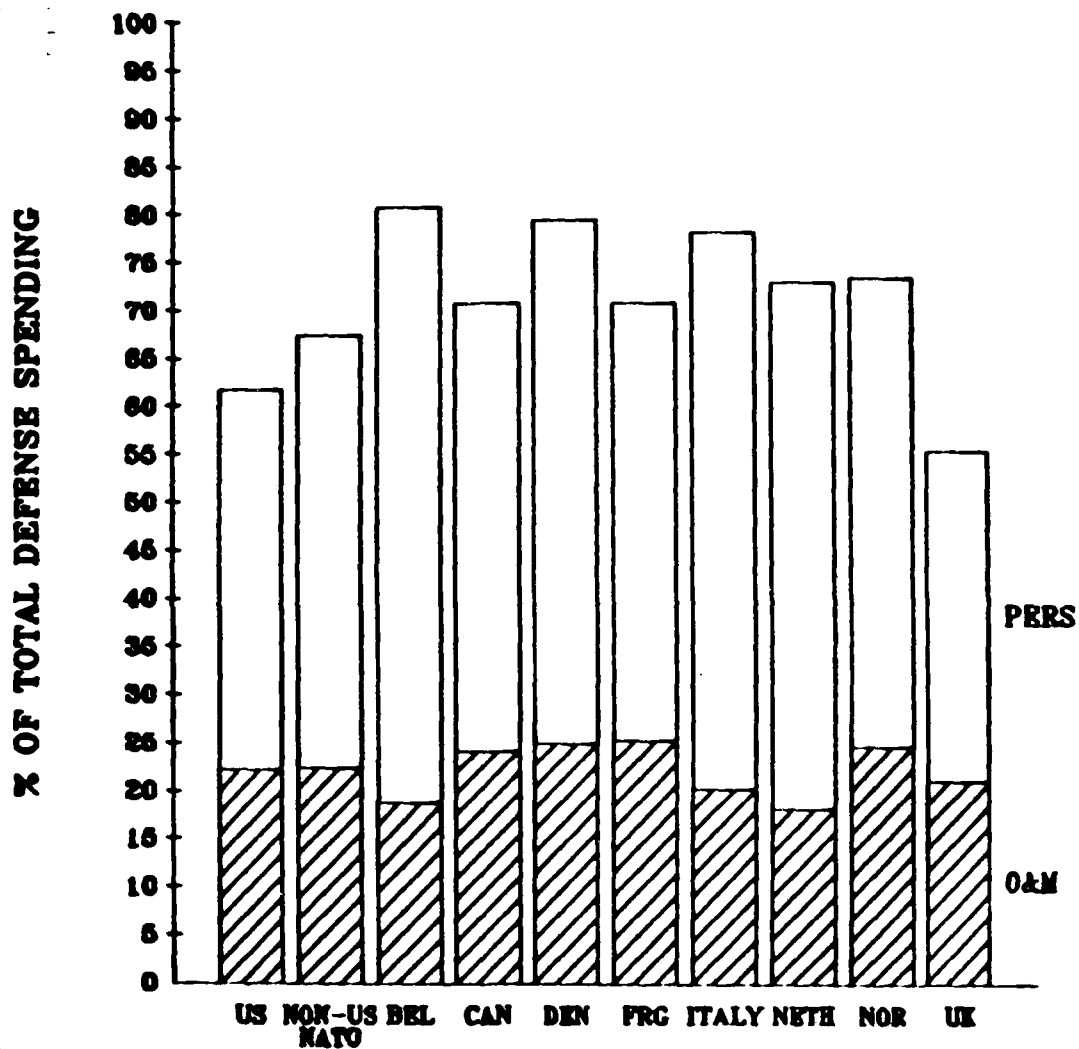
**PERCENT OF TOTAL DEFENSE SPENDING
ALLOCATED TO CAPITAL EXPENDITURES
1984**



RDT&E	10.0	5.4
EQUIP	26.7	23.6
MILCON	1.6	4.0
TOT CAP	38.3	32.9

Non-US average excludes FR, GR, LU, TU, SP

**PERCENT OF TOTAL DEFENSE SPENDING
ALLOCATED TO OPERATING EXPENDITURES
1984**



PERS	39.5	45.1
O&M	22.2	22.4
TOT OP	61.7	67.4

Non-US average excludes FR, GR, LU, TU, SP

CHART A-11

Total Defense Spending (FY)
(1984 Constant Dollars in Billions - 1964 Exchange Rates)

	1971			1984			Total % Change 71 vs 84
	\$	% of NATO & Japan Total	Rank	\$	% of NATO & Japan Total	Rank	
Belgium	\$ 1.62	0.6%	9	\$ 2.45	0.7%	9	+50.9
Canada	\$ 5.65	2.0%	6	\$ 7.53	2.2%	7	+33.3
Denmark	\$ 1.21	0.4%	11	\$ 1.26	0.4%	13	+4.2
France	\$ 13.97	4.9%	4	\$ 20.21	6.0%	3	+44.7
Germany	\$ 15.79	5.5%	3	\$ 20.12	5.9%	4	+27.5
Greece	\$ 1.05	0.4%	13	\$ 2.41	0.7%	10	+130.6
Italy	\$ 7.50	2.6%	5	\$ 9.35	2.8%	6	+24.7
Luxembourg	\$ 0.02	0.0%	15	\$ 0.04	0.0%	15	+96.0
Netherlands	\$ 3.28	1.1%	8	\$ 3.98	1.2%	8	+21.4
Norway	\$ 1.21	0.4%	10	\$ 1.55	0.5%	12	+26.0
Portugal	\$ 0.87	0.3%	14	\$ 0.63	0.2%	14	-28.0
Turkey	\$ 1.06	0.4%	12	\$ 2.19	0.6%	11	+106.5
UK	\$ 20.16	7.1%	2	\$ 23.40	6.9%	2	+16.1
US	\$ 207.20	72.5%	1	\$ 231.46	68.4%	1	+11.7
Japan	\$ 5.31	1.9%	7	\$ 11.69	3.5%	5	+119.9
Non US NATO	\$ 73.39	25.7%		\$ 95.14	28.1%		+29.6
Non US NATO + Japan	\$ 78.71	27.5%		\$ 106.62	31.6%		+35.7
Total NATO	\$ 280.59	96.1%		\$ 326.60	96.5%		+16.4
Total NATO + Japan	\$ 285.90	100.0%		\$ 336.26	100.0%		+18.3

CHART A-12

Total Defense Spending (FY)
(1984 Constant Dollars in Billions - 1984 Exchange Rates)
(Including Spain)

	1971			1984			Total % Change
	\$	% of NATO & Japan Total	Rank	\$	% of NATO & Japan Total	Rank	71 vs 84
Belgium	\$ 1.62	0.6%	9	\$ 2.45	0.7%	10	+50.9
Canada	\$ 5.65	2.0%	6	\$ 7.53	2.2%	7	+33.3
Denmark	\$ 1.21	0.4%	11	\$ 1.26	0.4%	14	+4.2
France	\$ 13.97	4.9%	4	\$ 20.21	5.9%	3	+44.7
Germany	\$ 15.79	5.5%	3	\$ 20.12	5.9%	4	+27.5
Greece	\$ 1.05	0.4%	13	\$ 2.41	0.7%	11	+130.6
Italy	\$ 7.50	2.6%	5	\$ 9.35	2.7%	6	+24.7
Luxembourg	\$ 0.02	0.0%	15	\$ 0.04	0.0%	16	+96.0
Netherlands	\$ 3.28	1.1%	8	\$ 3.98	1.2%	9	+21.4
Norway	\$ 1.21	0.4%	10	\$ 1.55	0.5%	13	+28.0
Portugal	\$ 0.87	0.3%	14	\$ 0.63	0.2%	15	-28.0
Spain				\$ 4.67	1.4%	8	0.0
Turkey	\$ 1.06	0.4%	12	\$ 2.19	0.6%	12	+106.5
UK	\$ 20.16	7.1%	2	\$ 23.40	6.8%	2	+16.1
US	\$ 207.20	72.5%	1	\$ 231.46	67.5%	1	+11.7
Japan	\$ 5.31	1.9%	7	\$ 11.69	3.4%	5	+119.9
Non-US NATO	\$ 73.39	25.7%		\$ 99.80	29.1%		+36.0
Non-US NATO + Japan	\$ 78.71	27.5%		\$ 111.49	32.5%		+41.6
Total NATO	\$ 280.59	98.1%		\$ 331.26	96.6%		+18.1
Total NATO + Japan	\$ 285.90	100.0%		\$ 342.95	100.0%		+20.0

CHART A-13

Total Defense Spending (CY) as a Percent of GDP

	<u>1971</u>			<u>1984</u>			<u>Total % Change</u>
		<u>% of Highest Nation</u>	<u>Rank</u>		<u>% of Highest Nation</u>	<u>Rank</u>	<u>71 vs 84</u>
Belgium	2.9	39.2%	10	3.2	44.7%	9	+11.2
Canada	2.2	30.2%	13	2.2	30.0%	13	-3.1
Denmark	2.4	32.8%	12	2.3	32.0%	12	-5.0
France	4.0	54.1%	6	4.1	57.3%	5	+3.2
Germany	3.4	45.5%	9	3.3	45.5%	6	-2.6
Greece	4.7	63.3%	4	7.2	100.0%	1	+53.8
Italy	2.7	36.5%	11	2.7	37.2%	11	-0.7
Luxembourg	0.8	10.8%	15	1.2	16.6%	14	+50.0
Netherlands	3.4	46.5%	7	3.2	44.8%	8	-6.2
Norway	3.4	45.8%	8	2.8	39.4%	10	-16.3
Portugal	7.4	100.0%	1	3.3	45.2%	7	-56.0
Turkey	4.5	61.3%	5	4.4	60.9%	4	-3.1
UK	4.9	66.6%	3	5.3	73.9%	3	+8.0
US	7.1	95.3%	2	6.5	90.5%	2	-7.6
Japan	0.8	11.2%	14	1.0	13.9%	15	+20.4
Non US NATO	3.6	48.1%		3.6	49.7%		+0.6
Non US NATO + Japan	3.0	40.2%		2.8	38.7%		-6.3
Total NATO	5.5	74.4%		5.3	73.4%		-3.9
Total NATO + Japan	5.0	67.6%		4.6	64.1%		-7.7

CHART A-14

Total Defense Spending (CY) as a Percent of GDP
(Including Spain)

	1971			1984			Total % Change
		% of Highest Nation	Rank		% of Highest Nation	Rank	71 vs 84
Belgium	2.9	39.2%	10	3.2	44.7%	9	+11.2
Canada	2.2	30.2%	13	2.2	30.0%	14	-3.1
Denmark	2.4	32.8%	12	2.3	32.0%	13	-5.0
France	4.0	54.1%	6	4.1	57.3%	5	+3.2
Germany	3.4	45.5%	9	3.3	45.5%	6	-2.6
Greece	4.7	63.3%	4	7.2	100.0%	1	+53.8
Italy	2.7	36.5%	11	2.7	37.2%	12	-0.7
Luxembourg	0.8	10.8%	15	1.2	16.6%	15	+50.0
Netherlands	3.4	46.5%	7	3.2	44.8%	8	-6.2
Norway	3.4	45.8%	8	2.8	39.4%	11	-16.3
Portugal	7.4	100.0%	1	3.3	45.2%	7	-56.0
Spain				2.9	40.2%	10	0.0
Turkey	4.5	61.3%	5	4.4	60.9%	4	-3.1
UK	4.9	66.6%	3	5.3	73.9%	3	+8.0
US	7.1	95.3%	2	6.5	90.5%	2	-7.6
Japan	0.8	11.2%	14	1.0	13.9%	16	+20.4
Non US NATO	3.6	48.1%		3.5	49.2%		-0.5
Non US NATO + Japan	3.0	40.2%		2.8	36.8%		-6.1
Total NATO	5.5	74.4%		5.2	72.6%		-5.0
Total NATO + Japan	5.0	67.6%		4.6	63.5%		-8.4

CHART A-15

Total Active Duty Military and Civilian Manpower
(Thousands)

	<u>1971</u>			<u>1984</u>			<u>Total % Change</u>
		<u>% of NATO & Japan Total</u>	<u>Rank</u>		<u>% of NATO & Japan Total</u>	<u>Rank</u>	<u>71 vs 84</u>
Belgium	114.3	1.4%	12	114.2	1.5%	11	-0.1
Canada	127.8	1.5%	11	121.6	1.6%	10	-4.9
Denmark	53.6	0.6%	13	40.4	0.5%	14	-24.7
France	705.3	8.4%	3	714.9	9.2%	3	+1.4
Germany	645.3	7.7%	5	662.5	8.6%	4	+2.7
Greece	202.7	2.4%	9	232.6	3.0%	8	+14.7
Italy	600.5	7.2%	6	565.4	7.3%	5	-5.8
Luxembourg	1.2	0.0%	15	1.4	0.0%	15	+16.7
Netherlands	141.9	1.7%	10	130.5	1.7%	9	-8.0
Norway	47.0	0.6%	14	50.2	0.6%	13	+6.8
Portugal	249.4	3.0%	8	111.3	1.4%	12	-55.4
Turkey	650.5	7.8%	4	872.9	11.3%	2	+34.2
UK	719.0	8.6%	2	546.8	7.1%	6	-23.9
US	3831.7	45.9%	1	3315.0	42.8%	1	-13.5
Japan	258.9	3.1%	7	264.8	3.4%	7	+2.3
Non US NATO	4258.5	51.0%		4164.6	53.8%		-2.2
Non US NATO + Japan	4517.4	54.1%		4429.4	57.2%		-1.9
Total NATO	8090.2	96.9%		7479.6	96.6%		-7.5
Total NATO + Japan	8349.1	100.0%		7744.4	100.0%		-7.2

CHART A-16

Total Active Duty Military and Civilian Manpower
(Thousands)

(Including Spain)

	1971			1984			Total % Change
		% of NATO & Japan Total	Rank		% of NATO & Japan Total	Rank	71 vs 84
Belgium	114.3	1.4%	12	114.2	1.4%	12	-0.1
Canada	127.8	1.5%	11	121.6	1.5%	11	-4.9
Denmark	53.6	0.6%	13	40.4	0.5%	15	-24.7
France	705.3	8.4%	3	714.9	8.6%	3	+1.4
Germany	645.3	7.7%	5	662.5	8.0%	4	+2.7
Greece	202.7	2.4%	9	232.6	2.8%	9	+14.7
Italy	600.5	7.2%	6	565.4	6.8%	5	-5.8
Luxembourg	1.2	0.0%	15	1.4	0.0%	16	+16.7
Netherlands	141.9	1.7%	10	130.5	1.6%	10	-8.0
Norway	47.0	0.6%	14	50.2	0.6%	14	+6.8
Portugal	249.4	3.0%	8	111.3	1.3%	13	-55.4
Spain				546.9	6.6%	6	0.0
Turkey	650.5	7.8%	4	872.9	10.5%	2	+34.2
UK	719.0	8.6%	2	546.8	6.6%	7	-23.9
US	3831.7	45.9%	1	3315.0	40.0%	1	-13.5
Japan	258.9	3.1%	7	264.8	3.2%	8	+2.3
Non US NATO	4258.5	51.0%		4711.5	56.8%		+10.6
Non US NATO + Japan	4517.4	54.1%		4976.3	60.0%		+10.2
Total NATO	8090.2	96.9%		8026.5	96.8%		-0.8
Total NATO + Japan	8349.1	100.0%		8291.3	100.0%		-0.7

CHART A-17

Total Active Duty Military Manpower
(Thousands)

	1971			1984			Total % Change
		% of NATO & Japan Total	Rank		% of NATO & Japan Total	Rank	71 vs 84
Belgium	106.8	1.7%	11	107.1	1.8%	9	+0.3
Canada	86.9	1.4%	12	82.0	1.4%	12	-5.6
Denmark	44.5	0.7%	13	30.8	0.5%	14	-30.7
France	569.3	9.0%	3	570.5	9.8%	3	+0.2
Germany	472.0	7.5%	5	487.5	8.3%	5	+3.3
Greece	178.7	2.8%	9	197.1	3.4%	8	+10.3
Italy	526.0	8.3%	4	507.7	8.7%	4	-3.5
Luxembourg	1.1	0.0%	15	1.2	0.0%	15	+11.8
Netherlands	113.0	1.8%	10	103.3	1.8%	10	-8.6
Norway	36.3	0.6%	14	39.5	0.7%	13	+8.8
Portugal	244.2	3.9%	7	100.3	1.7%	11	-58.9
Turkey	614.5	9.7%	2	814.5	13.9%	2	+32.5
UK	384.0	6.1%	6	336.3	5.8%	6	-12.4
US	2714.0	42.9%	1	2222.0	38.0%	1	-18.1
Japan	234.3	3.7%	8	241.0	4.1%	7	+2.9
Non US NATO	3377.3	53.4%		3377.8	57.8%		+0.0
Non US NATO + Japan	3611.6	57.1%		3618.8	62.0%		+0.2
Total NATO	6091.3	96.3%		5599.8	95.9%		-8.1
Total NATO + Japan	6325.6	100.0%		5840.8	100.0%		-7.7

CHART A-18

Total Active Duty Military Manpower
(Thousands)

(Including Spain)

	1971			1984			Total % Change
		% of NATO & Japan Total	Rank		% of NATO & Japan Total	Rank	71 vs 84
Belgium	106.8	1.7%	11	107.1	1.7%	10	+0.3
Canada	86.9	1.4%	12	82.0	1.3%	13	-5.6
Denmark	44.5	0.7%	13	30.8	0.5%	15	-30.7
France	569.3	9.0%	3	570.5	9.0%	3	+0.2
Germany	472.0	7.5%	5	487.5	7.7%	6	+3.3
Greece	178.7	2.8%	9	197.1	3.1%	9	+10.3
Italy	526.0	8.3%	4	507.7	8.0%	4	-3.5
Luxembourg	1.1	0.0%	15	1.2	0.0%	16	+11.8
Netherlands	113.0	1.8%	10	103.3	1.6%	11	-8.6
Norway	36.3	0.6%	14	39.5	0.6%	14	+8.8
Portugal	244.2	3.9%	7	100.3	1.6%	12	-58.9
Spain				491.3	7.8%	5	0.0
Turkey	614.5	9.7%	2	814.5	12.9%	2	+32.5
UK	384.0	6.1%	6	336.3	5.3%	7	-12.4
US	2714.0	42.9%	1	2222.0	35.1%	1	-18.1
Japan	234.3	3.7%	8	241.0	3.8%	8	+2.9
Non US NATO	3377.3	53.4%		3869.1	61.1%		+14.6
Non US NATO + Japan	3611.6	57.1%		4110.1	64.9%		+13.8
Total NATO	6091.3	96.3%		6091.1	96.2%		0.0
Total NATO + Japan	6325.6	100.0%		6332.1	100.0%		+0.1

CHART A-19

Active Duty Military and Civilian Manpower and Committed Reserves
(Thousands)

	<u>1984</u>		
		<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	239.8	1.99%	10
Canada	143.5	1.19%	13
Denmark	108.7	0.90%	14
France	1169.6	9.71%	3
Germany	1406.9	11.67%	2
Greece	485.3	4.03%	7
Italy	826.9	6.86%	5
Luxembourg	1.4	0.01%	15
Netherlands	300.1	2.49%	8
Norway	236.0	1.96%	11
Portugal	162.2	1.35%	12
Turkey	1157.5	9.61%	4
UK	711.5	5.90%	6
US	4809.5	39.91%	1
Japan	292.0	2.42%	9
Non US NATO	6949.3	57.67%	
Non US NATO + Japan	7241.3	60.09%	
Total NATO	11758.8	97.58%	
Total NATO + Japan	12050.8	100.00%	

CHART A-20

Active Duty Military and Civilian Manpower and Committed Reserves
(Thousands)

(Including Spain)

	1984		
		% of NATO & Japan Total	Rank
Belgium	239.8	1.86%	11
Canada	143.5	1.11%	14
Denmark	108.7	0.84%	15
France	1169.6	9.06%	3
Germany	1406.9	10.90%	2
Greece	485.3	3.76%	8
Italy	826.9	6.41%	6
Luxembourg	1.4	0.01%	16
Netherlands	300.1	2.32%	9
Norway	236.0	1.83%	12
Portugal	162.2	1.26%	13
Spain	857.5	6.64%	5
Turkey	1157.5	8.97%	4
UK	711.5	5.51%	7
US	4809.5	37.26%	1
Japan	292.0	2.26%	10
Non US NATO	7806.8	60.46%	
Non US NATO + Japan	8098.8	62.74%	
Total NATO	12616.3	97.74%	
Total NATO + Japan	12908.3	100.00%	

CHART A-21

Total Active Duty Military and Civilian Manpower
As a Percent of Total Population

	1971			1984			Total % Change
	%	% of Highest Nation	Rank	%	% of Highest Nation	Rank	71 vs 84
Belgium	1.18	42.5%	8	1.16	49.4%	6	-1.9
Canada	0.59	21.3%	13	0.48	20.6%	13	-18.3
Denmark	1.08	38.8%	10	0.79	33.7%	12	-26.9
France	1.38	49.5%	5	1.30	55.4%	4	-5.5
Germany	1.05	37.8%	12	1.08	46.1%	8	+2.9
Greece	2.30	82.5%	2	2.35	100.0%	1	+2.2
Italy	1.11	40.0%	9	0.99	42.3%	9	-10.8
Luxembourg	0.35	12.5%	14	0.38	16.3%	14	+10.0
Netherlands	1.08	38.7%	11	0.91	38.6%	11	-15.9
Norway	1.20	43.3%	7	1.21	51.7%	5	+0.7
Portugal	2.78	100.0%	1	1.09	46.6%	7	-60.7
Turkey	1.80	64.6%	4	1.79	76.3%	2	-0.3
UK	1.29	46.4%	6	0.97	41.2%	10	-25.0
US	1.85	66.5%	3	1.40	59.7%	3	-24.3
Japan	0.24	8.8%	15	0.22	9.4%	15	-9.9
Non US NATO	1.29	46.4%		1.17	49.6%		-9.7
Non US NATO + Japan	1.04	37.3%		0.93	39.5%		-10.5
Total NATO	1.51	54.2%		1.26	53.6%		-16.4
Total NATO + Japan	1.30	46.7%		1.08	46.2%		-16.5

CHART 22

Total Active Duty Military and Civilian Manpower
As a Percent of Total Population

(Including Spain)

	1971			1984			Total % Change
	%	% of Highest Nation	Rank	%	% of Highest Nation	Rank	71 vs 84
Belgium	1.18	42.5%	8	1.16	49.4%	7	-1.9
Canada	0.59	21.3%	13	0.48	20.6%	14	-18.3
Denmark	1.08	38.8%	10	0.79	33.7%	13	-26.9
France	1.38	49.5%	5	1.30	55.4%	5	-5.5
Germany	1.05	37.8%	12	1.08	46.1%	9	+2.9
Greece	2.30	82.5%	2	2.35	100.0%	1	+2.2
Italy	1.11	40.0%	9	0.99	42.3%	10	-10.8
Luxembourg	0.35	12.5%	14	0.38	16.3%	15	+10.0
Netherlands	1.08	38.7%	11	0.91	38.6%	12	-15.9
Norway	1.20	43.3%	7	1.21	51.7%	6	+0.7
Portugal	2.76	100.0%	1	1.09	46.6%	8	-60.7
Spain				1.42	60.7%	3	0.0
Turkey	1.80	64.6%	4	1.79	76.3%	2	-0.3
UK	1.29	46.4%	6	0.97	41.2%	11	-25.0
US	1.85	66.5%	3	1.40	59.7%	4	-24.3
Japan	0.24	8.6%	15	0.22	9.4%	16	-9.9
Non US NATO	1.29	46.4%		1.19	50.7%		-7.6
Non US NATO + Japan	1.04	37.3%		0.96	41.1%		-7.0
Total NATO	1.51	54.2%		1.27	54.1%		-15.8
Total NATO + Japan	1.30	46.7%		1.10	46.9%		-15.2

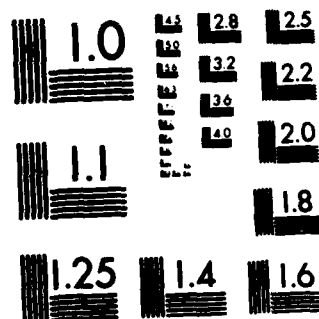
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

CHART A-23

Total Active Duty Military Manpower
As a Percent of Total Population

	1971			1984			Total % Change
	%	% of Highest Nation	Rank	%	% of Highest Nation	Rank	71 vs 84
Belgium	1.10	40.5%	6	1.09	54.7%	3	-1.5
Canada	0.40	14.8%	13	0.33	16.4%	14	-18.9
Denmark	0.90	32.9%	9	0.60	30.3%	11	-32.7
France	1.11	40.8%	5	1.04	52.2%	4	-6.5
Germany	0.77	28.3%	11	0.80	40.1%	9	+3.5
Greece	2.02	74.3%	2	1.99	100.0%	1	-1.7
Italy	0.97	35.8%	7	0.89	44.8%	8	-8.5
Luxembourg	0.32	11.7%	14	0.34	16.9%	13	+5.4
Netherlands	0.86	31.4%	10	0.72	36.0%	10	-16.4
Norway	0.93	34.2%	8	0.95	47.9%	6	+2.5
Portugal	2.72	100.0%	1	0.99	49.6%	5	-63.8
Turkey	1.70	62.3%	3	1.67	84.1%	2	-1.5
UK	0.69	25.3%	12	0.60	29.9%	12	-13.6
US	1.31	48.1%	4	0.94	47.2%	7	-28.4
Japan	0.22	8.1%	15	0.20	10.1%	15	-9.4
Non US NATO	1.02	37.6%		0.94	47.5%		-7.7
Non US NATO + Japan	0.83	30.4%		0.76	38.1%		-8.6
Total NATO	1.13	41.7%		0.94	47.4%		-16.9
Total NATO + Japan	0.98	36.1%		0.82	41.1%		-16.9

CHART A-24

Total Active Duty Military Manpower
As a Percent of Total Population

(Including Spain)

	1971			1984			Total % Change
	%	% of Highest Nation	Rank	%	% of Highest Nation	Rank	71 vs 84
Belgium	1.10	40.5%	6	1.09	54.7%	4	-1.5
Canada	0.40	14.8%	13	0.33	16.4%	15	-18.9
Denmark	0.90	32.9%	9	0.60	30.3%	12	-32.7
France	1.11	40.8%	5	1.04	52.2%	5	-6.5
Germany	0.77	28.3%	11	0.80	40.1%	10	+3.5
Greece	2.02	74.3%	2	1.99	100.0%	1	-1.7
Italy	0.97	35.8%	7	0.89	44.8%	9	-8.5
Luxembourg	0.32	11.7%	14	0.34	16.9%	14	+5.4
Netherlands	0.86	31.4%	10	0.72	36.0%	11	-16.4
Norway	0.93	34.2%	8	0.95	47.9%	7	+2.5
Portugal	2.72	100.0%	1	0.99	49.6%	6	-63.8
Spain				1.28	64.4%	3	0.0
Turkey	1.70	62.3%	3	1.67	84.1%	2	-1.5
UK	0.69	25.3%	12	0.60	29.9%	13	-13.6
US	1.31	48.1%	4	0.94	47.2%	8	-26.4
Japan	0.22	6.1%	15	0.20	10.1%	16	-9.4
Non US NATO	1.02	37.6%		0.98	49.2%		-4.5
Non US NATO + Japan	0.83	30.4%		0.80	40.1%		-3.9
Total NATO	1.13	41.7%		0.96	48.4%		-15.1
Total NATO + Japan	0.98	36.1%		0.84	42.3%		-14.5

CHART A-25

Total Active Duty Military and Civilian Manpower and Committed Reserves
As a Percent of Total Population

	1984		
	<u>%</u>	<u>% of Highest Nation</u>	<u>Rank</u>
Belgium	2.43	42.7%	3
Canada	0.57	10.0%	13
Denmark	2.13	37.3%	7
France	2.13	37.3%	6
Germany	2.30	40.3%	5
Greece	4.90	85.9%	2
Italy	1.45	25.5%	11
Luxembourg	0.38	6.7%	14
Netherlands	2.08	36.5%	8
Norway	5.70	100.0%	1
Portugal	1.59	26.0%	10
Turkey	2.38	41.7%	4
UK	1.26	22.1%	12
US	2.03	35.7%	9
Japan	0.24	4.3%	15
Non US NATO	1.94	34.1%	
Non US NATO + Japan	1.52	26.6%	
Total NATO	1.98	34.7%	
Total NATO + Japan	1.69	29.6%	

CHART A-26

Total Active Duty Military and Civilian Manpower and Committed Reserves
As a Percent of Total Population

(Including Spain)

	1984		
	<u>%</u>	<u>% of Highest Nation</u>	<u>Rank</u>
Belgium	2.43	42.7%	3
Canada	0.57	10.0%	14
Denmark	2.13	37.3%	8
France	2.13	37.3%	7
Germany	2.30	40.3%	5
Greece	4.90	85.9%	2
Italy	1.45	25.5%	12
Luxembourg	0.38	6.7%	15
Netherlands	2.08	36.5%	9
Norway	5.70	100.0%	1
Portugal	1.59	28.0%	11
Spain	2.23	39.2%	6
Turkey	2.38	41.7%	4
UK	1.26	22.1%	13
US	2.03	35.7%	10
Japan	0.24	4.3%	16
Non US NATO	1.97	34.6%	
Non US NATO + Japan	1.57	27.5%	
Total NATO	1.99	35.0%	
Total NATO + Japan	1.72	30.1%	

CHART A-27

Armored Division Equivalents (ADE's)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	1.57%	11
Canada	1.14%	13
Denmark	1.73%	10
France	6.08%	4
Germany	10.69%	3
Greece	6.02%	5
Italy	4.55%	7
Luxembourg	0.01%	15
Netherlands	3.29%	9
Norway	1.50%	12
Portugal	0.87%	14
Turkey	11.16%	2
UK	4.94%	6
US	42.59%	1
Japan	3.85%	8
Non US NATO	53.56%	
Non US NATO + Japan	57.41%	
Total NATO	96.15%	
Total NATO + Japan	100.00%	

CHART A-28

Armored Division Equivalents (ADE's)
(Including Spain)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	1.51%	12
Canada	1.09%	14
Denmark	1.66%	11
France	5.84%	4
Germany	10.25%	3
Greece	5.78%	5
Italy	4.36%	7
Luxembourg	0.01%	16
Netherlands	3.16%	10
Norway	1.44%	13
Portugal	0.84%	15
Spain	4.07%	8
Turkey	10.71%	2
UK	4.74%	6
US	40.85%	1
Japan	3.70%	9
Non US NATO	55.45%	
Non US NATO + Japan	59.15%	
Total NATO	96.30%	
Total NATO + Japan	100.00%	

CHART A-29

Naval Force Tonnage
(All Ships Less Strategic Submarines)
(Thousands)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	0.29%	14
Canada	1.83%	8
Denmark	0.44%	13
France	4.99%	3
Germany	3.24%	5
Greece	1.81%	9
Italy	1.89%	7
Luxembourg	0.00%	15
Netherlands	1.46%	10
Norway	0.63%	12
Portugal	0.65%	11
Turkey	3.36%	4
UK	11.09%	2
US	65.11%	1
Japan	3.20%	6
Non US NATO	31.69%	
Non US NATO + Japan	34.89%	
Total NATO	96.80%	
Total NATO + Japan	100.00%	

CHART A-30

Naval Force Tonnage
(All Ships Less Strategic Submarines)
(Thousands)

(Including Spain)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	0.29%	15
Canada	1.79%	9
Denmark	0.43%	14
France	4.88%	3
Germany	3.17%	5
Greece	1.77%	10
Italy	1.85%	8
Luxembourg	0.00%	16
Netherlands	1.42%	11
Norway	0.62%	13
Portugal	0.63%	12
Spain	2.19%	7
Turkey	3.29%	4
UK	10.85%	2
US	63.69%	1
Japan	3.13%	6
Nor. US NATO	33.18%	
Nor. US NATO + Japan	36.31%	
Total NATO	96.87%	
Total NATO + Japan	100.00%	

CHART A-31
Naval Force Tonnage
(Principal Surface Combatants)
(Thousands)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	0.42%	14
Canada	3.36%	6
Denmark	0.44%	13
France	6.73%	3
Germany	2.70%	9
Greece	2.68%	10
Italy	3.83%	5
Luxembourg	0.00%	15
Netherlands	2.94%	8
Norway	0.86%	12
Portugal	1.14%	11
Turkey	3.17%	7
UK	8.79%	2
US	56.60%	1
Japan	6.34%	4
Non US NATO	37.06%	
Non US NATO + Japan	43.40%	
Total NATO	93.66%	
Total NATO + Japan	100.00%	

CHART A-32
Naval Force Tonnage
(Principal Surface Combatants)
(Thousands)
(Including Spain)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	0.41%	15
Canada	3.26%	6
Denmark	0.42%	14
France	6.51%	3
Germany	2.61%	10
Greece	2.59%	11
Italy	3.71%	5
Luxembourg	0.00%	16
Netherlands	2.85%	9
Norway	0.83%	13
Portugal	1.11%	12
Spain	3.18%	7
Turkey	3.07%	8
UK	8.51%	2
US	54.80%	1
Japan	6.13%	4
Non US NATO	39.06%	
Non US NATO + Japan	45.20%	
Total NATO	93.87%	
Total NATO + Japan	100.00%	

Chart A-33

Tactical Air Force Combat Aircraft

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	2.56%	9
Canada	2.43%	10
Denmark	1.40%	13
France	9.47%	2
Germany	8.90%	4
Greece	4.09%	8
Italy	5.97%	5
Luxembourg	0.00%	15
Netherlands	2.33%	11
Norway	1.50%	12
Portugal	1.15%	14
Turkey	4.53%	6
UK	9.38%	3
US	42.09%	1
Japan	4.20%	7
Non US NATO	53.71%	
Non US NATO + Japan	57.91%	
Total NATO	95.80%	
Total NATO + Japan	100.00%	

Chart A-34

Tactical Air Force Combat Aircraft
(Including Spain)

	<u>1984</u>	
	<u>% of NATO & Japan Total</u>	<u>Rank</u>
Belgium	2.51%	9
Canada	2.39%	10
Denmark	1.38%	14
France	9.29%	2
Germany	8.73%	4
Greece	4.01%	8
Italy	5.86%	5
Luxembourg	0.00%	16
Netherlands	2.29%	11
Norway	1.47%	13
Portugal	1.13%	15
Spain	1.87%	12
Turkey	4.44%	6
UK	9.21%	3
US	41.30%	1
Japan	4.12%	7
Non US NATO	54.58%	
Non US NATO + Japan	58.70%	
Total NATO	95.88%	
Total NATO + Japan	100.00%	

CHART A-35

Gross Domestic Product
1984 Constant Dollars in Billions - 1984 Exchange Rates

	1971			1984			Total % Change
	\$	% of NATO & Japan Total	Rank	\$	% of NATO & Japan Total	Rank	71 vs 84
Belgium	\$ 57	1.3%	9	\$ 76	1.0%	9	+33.4
Canada	\$ 221	4.4%	7	\$ 332	4.5%	7	+50.2
Denmark	\$ 42	0.8%	10	\$ 55	0.7%	11	+30.8
France	\$ 346	6.8%	4	\$ 489	6.6%	4	+41.4
Germany	\$ 470	9.3%	3	\$ 613	8.3%	3	+30.3
Greece	\$ 22	0.4%	13	\$ 33	0.5%	13	+51.8
Italy	\$ 256	5.1%	6	\$ 348	4.7%	6	+36.3
Luxembourg	\$ 2	0.0%	15	\$ 3	0.0%	15	+37.3
Netherlands	\$ 91	1.8%	8	\$ 123	1.7%	8	+34.6
Norway	\$ 33	0.6%	11	\$ 55	0.7%	10	+66.6
Portugal	\$ 13	0.2%	14	\$ 19	0.3%	14	+53.5
Turkey	\$ 28	0.5%	12	\$ 50	0.7%	12	+81.2
UK	\$ 338	6.7%	5	\$ 425	5.7%	5	+25.6
US	\$ 2495	49.4%	1	\$ 3635	49.0%	1	+45.7
Japan	\$ 641	12.7%	2	\$ 1166	15.7%	2	+82.0
Non US NATO	\$ 1919	38.0%		\$ 2622	35.3%		+36.6
Non US NATO + Japan	\$ 2560	50.6%		\$ 3789	51.0%		+48.0
Total NATO	\$ 4414	87.3%		\$ 6257	84.3%		+41.8
Total NATO + Japan	\$ 5055	100.0%		\$ 7423	100.0%		+46.9

CHART A-36

Gross Domestic Product
1984 Constant Dollars in Billions - 1984 Exchange Rates

(Including Spain)

	1971			1984			Total % Change
	\$	% of NATO & Japan Total	Rank	\$	% of NATO & Japan Total	Rank	71 vs 84
Belgium	\$ 57	1.1%	10	\$ 76	1.0%	10	+33.4
Canada	\$ 221	4.3%	7	\$ 332	4.4%	7	+50.2
Denmark	\$ 42	0.8%	11	\$ 55	0.7%	12	+30.8
France	\$ 346	6.7%	4	\$ 489	6.5%	4	+41.4
Germany	\$ 470	9.1%	3	\$ 613	8.1%	3	+30.3
Greece	\$ 22	0.4%	14	\$ 33	0.4%	14	+51.8
Italy	\$ 256	4.9%	6	\$ 348	4.6%	6	+36.3
Luxembourg	\$ 2	0.0%	16	\$ 3	0.0%	16	+37.3
Netherlands	\$ 91	1.8%	9	\$ 123	1.6%	9	+34.6
Norway	\$ 33	0.6%	12	\$ 55	0.7%	11	+66.6
Portugal	\$ 13	0.2%	15	\$ 19	0.3%	15	+53.5
Spain	\$ 114	2.2%	8	\$ 161	2.1%	8	+41.1
Turkey	\$ 28	0.5%	13	\$ 50	0.7%	13	+81.2
UK	\$ 338	6.5%	5	\$ 425	5.6%	5	+25.6
US	\$ 2495	48.3%	1	\$ 3635	47.9%	1	+45.7
Japan	\$ 641	12.4%	2	\$ 1166	15.4%	2	+82.0
Non US NATO	\$ 2033	39.3%		\$ 2783	36.7%		+36.9
Non US NATO + Japan	\$ 2674	51.7%		\$ 3950	52.1%		+47.7
Total NATO	\$ 4528	87.6%		\$ 6418	84.6%		+41.7
Total NATO + Japan	\$ 5169	100.0%		\$ 7584	100.0%		+46.7

CHART A-37

Total Population (84)
(Millions)

	1971			1984			Total % Change
		% of NATO & Japan Total	Rank		% of NATO & Japan Total	Rank	71 vs 84
Belgium	9.7	1.5%	10	9.9	1.4%	12	+1.9
Canada	21.6	3.4%	8	25.2	3.5%	8	+16.5
Denmark	5.0	0.8%	13	5.1	0.7%	13	+3.0
France	51.3	8.0%	6	54.9	7.7%	6	+7.2
Germany	61.3	9.5%	3	61.2	8.6%	3	-0.2
Greece	8.8	1.4%	12	9.9	1.4%	11	+12.2
Italy	54.0	8.4%	5	57.0	8.0%	4	+5.5
Luxembourg	0.3	0.1%	15	0.4	0.1%	15	+6.1
Netherlands	13.2	2.1%	9	14.4	2.0%	9	+9.3
Norway	3.9	0.6%	14	4.1	0.6%	14	+6.1
Portugal	9.0	1.4%	11	10.2	1.4%	10	+13.4
Turkey	36.2	5.6%	7	48.7	6.8%	7	+34.5
UK	55.7	8.7%	4	56.5	7.9%	5	+1.4
US	207.1	32.2%	1	236.7	33.1%	1	+14.3
Japan	105.7	16.4%	2	120.0	16.8%	2	+13.6
Non US NATO	330.0	51.3%		357.4	50.1%		+8.3
Non US NATO + Japan	435.6	67.8%		477.5	66.9%		+9.6
Total NATO	537.0	83.6%		594.1	83.2%		+10.6
Total NATO + Japan	642.7	100.0%		714.1	100.0%		+11.1

CHART A-38

Total Population (84)
(Millions)
(Including Spain)

	1971			1984			Total % Change
		% of NATO & Japan Total	Rank		% of NATO & Japan Total	Rank	71 vs 84
Belgium	9.7	1.4%	11	9.9	1.3%	13	+1.9
Canada	21.6	3.2%	9	25.2	3.3%	9	+16.5
Denmark	5.0	0.7%	14	5.1	0.7%	14	+3.0
France	51.3	7.6%	6	54.9	7.3%	6	+7.2
Germany	61.3	9.1%	3	61.2	8.1%	3	-0.2
Greece	8.8	1.3%	13	9.9	1.3%	12	+12.2
Italy	54.0	8.0%	5	57.0	7.6%	4	+5.5
Luxembourg	0.3	0.1%	16	0.4	0.0%	16	+6.1
Netherlands	13.2	1.9%	10	14.4	1.9%	10	+9.3
Norway	3.9	0.6%	15	4.1	0.6%	15	+6.1
Portugal	9.0	1.3%	12	10.2	1.4%	11	+13.4
Spain	34.1	5.0%	8	38.4	5.1%	8	+12.5
Turkey	36.2	5.4%	7	48.7	6.5%	7	+34.5
UK	55.7	8.2%	4	56.5	7.5%	5	+1.4
US	207.1	30.6%	1	236.7	31.5%	1	+14.3
Japan	105.7	15.6%	2	120.0	15.9%	2	+13.6
Non US NATO	364.1	53.8%		395.8	52.6%		+8.7
Non US NATO + Japan	469.8	69.4%		515.8	68.5%		+9.8
Total NATO	571.1	84.4%		632.5	84.1%		+10.7
Total NATO + Japan	676.8	100.0%		752.5	100.0%		+11.2

CHART A-39

Gross Domestic Product Per Capita
(1984 Constant Dollars - 1984 Exchange Rates)

	1971			1984			Total % Change
	\$	% of Highest Nation	Rank	\$	% of Highest Nation	Rank	71 vs 84
Belgium	\$ 5895	48.9%	11	\$ 7719	50.3%	10	+30.9
Canada	\$ 10254	85.1%	2	\$ 13220	86.1%	2	+28.9
Denmark	\$ 8416	69.8%	4	\$ 10690	69.6%	4	+27.0
France	\$ 6752	56.0%	8	\$ 8907	58.0%	7	+31.9
Germany	\$ 7675	63.7%	5	\$ 10022	65.3%	5	+30.6
Greece	\$ 2497	20.7%	13	\$ 3377	22.0%	13	+35.2
Italy	\$ 4734	39.3%	12	\$ 6114	39.8%	12	+29.1
Luxembourg	\$ 6827	56.7%	7	\$ 8837	57.5%	8	+29.5
Netherlands	\$ 6927	57.5%	6	\$ 8534	55.6%	9	+23.2
Norway	\$ 8416	69.8%	3	\$ 13218	86.1%	3	+57.1
Portugal	\$ 1403	11.6%	14	\$ 1899	12.4%	14	+35.3
Turkey	\$ 760	6.3%	15	\$ 1023	6.7%	15	+34.7
UK	\$ 6070	50.4%	9	\$ 7518	49.0%	11	+23.9
US	\$ 12049	100.0%	1	\$ 15356	100.0%	1	+27.5
Japan	\$ 6063	50.3%	10	\$ 9717	63.3%	6	+60.3
Non US NATO	\$ 5817	48.3%		\$ 7337	47.8%		+26.1
Non US NATO + Japan	\$ 5877	48.8%		\$ 7935	51.7%		+35.0
Total NATO	\$ 8220	68.2%		\$ 10532	68.6%		+28.1
Total NATO + Japan	\$ 7865	65.3%		\$ 10395	67.7%		+32.2

CHART A-40

Gross Domestic Product Per Capita
(1984 Constant Dollars - 1984 Exchange Rates)

(Including Spain)

	1971			1984			Total % Change
	\$	% of Highest Nation	Rank	\$	% of Highest Nation	Rank	71 vs 84
Belgium	\$ 5895	48.9%	11	\$ 7719	50.3%	10	+30.9
Canada	\$ 10254	85.1%	2	\$ 13220	86.1%	2	+28.9
Denmark	\$ 8416	69.8%	4	\$ 10690	69.6%	4	+27.0
France	\$ 6752	56.0%	8	\$ 8907	58.0%	7	+31.9
Germany	\$ 7675	63.7%	5	\$ 10022	65.3%	5	+30.6
Greece	\$ 2497	20.7%	14	\$ 3377	22.0%	14	+35.2
Italy	\$ 4734	39.3%	12	\$ 6114	39.8%	12	+29.1
Luxembourg	\$ 6827	56.7%	7	\$ 8837	57.5%	8	+29.5
Netherlands	\$ 6927	57.5%	6	\$ 8534	55.6%	9	+23.2
Norway	\$ 8416	69.8%	3	\$ 13218	86.1%	3	+57.1
Portugal	\$ 1403	11.6%	15	\$ 1899	12.4%	15	+35.3
Spain	\$ 3341	27.7%	13	\$ 4192	27.3%	13	+25.5
Turkey	\$ 760	6.3%	16	\$ 1023	6.7%	16	+34.7
UK	\$ 6070	50.4%	9	\$ 7518	49.0%	11	+23.9
US	\$ 12049	100.0%	1	\$ 15356	100.0%	1	+27.5
Japan	\$ 6063	50.3%	10	\$ 9717	63.3%	6	+60.3
Non US NATO	\$ 5585	46.4%		\$ 7032	45.8%		+25.9
Non US NATO + Japan	\$ 5692	47.2%		\$ 7657	49.9%		+34.5
Total NATO	\$ 7928	65.8%		\$ 10147	66.1%		+28.0
Total NATO + Japan	\$ 7637	63.4%		\$ 10078	65.6%		+32.0

CHART A-41

Per Capita Defense Spending (FY)
(1984 Constant Dollars - 1984 Exchange Rates)

	1971			1984			Total % Change
	\$	% of Highest Nation	Rank	\$	% of Highest Nation	Rank	71 vs 84
Belgium	\$ 168	16.8%	9	\$ 249	25.4%	8	+48.2
Canada	\$ 262	26.2%	5	\$ 300	30.6%	6	+14.4
Denmark	\$ 244	24.3%	8	\$ 246	25.2%	9	+1.2
France	\$ 273	27.2%	4	\$ 368	37.6%	4	+34.9
Germany	\$ 258	25.7%	6	\$ 329	33.6%	5	+27.7
Greece	\$ 118	11.8%	11	\$ 243	24.9%	10	+105.5
Italy	\$ 139	13.9%	10	\$ 164	16.8%	11	+18.2
Luxembourg	\$ 57	5.7%	13	\$ 106	10.8%	12	+84.8
Netherlands	\$ 248	24.8%	7	\$ 276	28.2%	7	+11.1
Norway	\$ 311	31.1%	3	\$ 375	38.4%	3	+20.6
Portugal	\$ 97	9.7%	12	\$ 62	6.3%	14	-36.5
Turkey	\$ 29	2.9%	15	\$ 45	4.6%	15	+53.5
UK	\$ 362	36.2%	2	\$ 414	42.4%	2	+14.5
US	\$ 1001	100.0%	1	\$ 978	100.0%	1	-2.3
Japan	\$ 50	5.0%	14	\$ 97	10.0%	13	+93.6
Non US NATO	\$ 222	22.2%		\$ 266	27.2%		+19.7
Non US NATO + Japan	\$ 181	18.1%		\$ 224	22.9%		+23.8
Total NATO	\$ 523	52.2%		\$ 550	56.2%		+5.2
Total NATO + Japan	\$ 445	44.5%		\$ 474	48.4%		+6.5

CHART A-42

Per Capita Defense Spending (FY)
(1984 Constant Dollars - 1984 Exchange Rates)

(Including Spain)

	1971			1984			Total % Change
	\$	% of Highest Nation	Rank	\$	% of Highest Nation	Rank	71 vs 84
Belgium	\$ 168	16.8%	9	\$ 249	25.4%	8	+48.2
Canada	\$ 262	26.2%	5	\$ 300	30.6%	6	+14.4
Denmark	\$ 244	24.3%	8	\$ 246	25.2%	9	+1.2
France	\$ 273	27.2%	4	\$ 368	37.6%	4	+34.9
Germany	\$ 256	25.7%	6	\$ 329	33.6%	5	+27.7
Greece	\$ 118	11.8%	11	\$ 243	24.9%	10	+105.5
Italy	\$ 139	13.9%	10	\$ 164	16.8%	11	+18.2
Luxembourg	\$ 57	5.7%	13	\$ 106	10.8%	13	+84.8
Netherlands	\$ 248	24.8%	7	\$ 276	28.2%	7	+11.1
Norway	\$ 311	31.1%	3	\$ 375	38.4%	3	+20.6
Portugal	\$ 97	9.7%	12	\$ 62	6.3%	15	-36.5
Spain	\$			\$ 122	12.4%	12	0.0
Turkey	\$ 29	2.9%	15	\$ 45	4.6%	16	+53.5
UK	\$ 362	36.2%	2	\$ 414	42.4%	2	+14.5
US	\$ 1001	100.0%	1	\$ 978	100.0%	1	-2.3
Japan	\$ 50	5.0%	14	\$ 97	10.0%	14	+93.6
Non-US NATO	\$ 222	22.2%		\$ 252	25.8%		+13.4
Non-US NATO + Japan	\$ 181	18.1%		\$ 216	22.1%		+19.6
Total NATO	\$ 523	52.2%		\$ 524	53.6%		+0.2
Total NATO + Japan	\$ 445	44.5%		\$ 456	46.6%		+2.4

APPENDIX R

BURDENSARING MEASUREMENT FACTORS

DATA PROBLEMS

Any discussion of comparative burdensharing must rest on comparability of the underlying data on which comparisons are based. Ultimately all the data must come from the countries concerned, but each has its own budgetary, financial and tax systems. In addition, different methods of recruiting and managing manpower make it difficult to compare personnel costs between and among nations. Problems are created by fluctuations in international exchange rates and differences in the quality and use of inflation indicators. NATO has attempted to deal with some of these problems, e.g., by agreeing on a common definition of what constitutes defense expenditures. NATO has not, however, formally addressed such problems as differences in purchasing power parity, the effects of taxation on defense expenditures, or ways to normalize manpower costs resulting from the use of volunteers or conscripts.

DEFINITION OF DEFENSE EXPENDITURES

The necessary and fundamental basis for a comparison of NATO defense efforts is an agreed common definition of defense expenditures. These are defined broadly, for NATO purposes, as expenditures made by national governments specifically to meet the needs of the country's armed forces. Under this definition expenditures for any given period should represent payments made during that same period, even if, for national accounting reasons, the payments may be charged to a preceding budget period. Only actual payments are counted, and the payment is considered made when the money is actually disbursed. Indirect costs, such as loss of revenue caused by tax exemptions on government transactions, are not counted as payments. An example of a non-defense budget item which might be included in the NATO definition is the cost of domestic security forces (assuming they will be under military authority in wartime, have had military training, and are issued military equipment). Other examples would be government contributions to military pension systems and unreimbursed military assistance to other members of the Alliance. Items which would not be included in the NATO definition are, inter alia, the costs of war damage, veterans' benefits, civil defense, and stockpiling of strategic materials.

The definition above is substantially complete but does not cover all the possible cases. Any division between defense expenditures and other public outlays which contribute to NATO security is partially and necessarily arbitrary. Aid to developing countries and the expense of maintaining free access to Berlin supplement military outlays to the extent that they foster political cohesion and contribute to free world stability.

Some authorities believe that the cost of defense should be defined in terms of the value of civilian goods and services foregone because of the necessity to spend on defense - the opportunity costs, in an economist's definition. The difference between the opportunity cost and the defense expenditure could be significant in the case of the pay of military personnel in countries which rely on conscription, where military pay is lower than the foregone value of their services to the economy. Defense efforts of such countries would be understated in comparison to those of countries with volunteer forces. This distinction holds, however, only when the civilian labor market would offer alternative employment to all conscripted individuals, as in situations of full employment. As unemployment fluctuates in each country the opportunity cost of conscript manpower changes with it.

EXCHANGE RATES

Exchange rate fluctuations exert an important influence on international comparisons of defense burden-sharing. For example, when the US dollar exchange rate falls in terms of the currency of another NATO ally, that country's defense budget appears smaller when converted to dollars. Nevertheless, the amount of defense a given sum can buy remains the same (within the country) despite the fall in terms of the dollar.

In the past year, most NATO currencies have remained fairly stable in terms of each other while most have strengthened against the dollar. None has appreciated significantly. Exchange rates have been held constant in this report to minimize the misleading effects of exchange rate fluctuations on burden-sharing comparisons.

Exchange rate fluctuations reflect economic and political changes in the supply and demand of currencies, which themselves reflect changing financial and trade relationships among countries. They may also reflect changes in mood or business confidence. Because exchange rates are subject to several economic and political forces, the resulting changes in the costs of stationing troops are not considered costs to the Alliance in burden-sharing terms.

It is necessary to find a method to equalize exchange rate fluctuations. The most precise method devised to date is the Purchasing Power Parity (PPP) system. This states the number of units of a country's currency which have the same purchasing power for a category of good or services as one US dollar has in a given year. This is a good system for comparison between two countries, but becomes much more difficult when three or more are involved.

Another system, developed by the United Nations, is the Country-Product-Dummy (CPD) method which uses a set of "international prices" derived from purchasing power parities. The UN comparisons using these "international prices" reveal a different picture when compared with straight linear exchange rate conversions. The latter method tends to understate real expenditures by other countries relative to the US, especially when the dollar is strong (as it has been during the past few years).

Because of such problems of statistical methodology NATO uses agreed-upon statistical data and systems in preparing its International Staff Memorandum: "Basic Statistical Data on the Defense Effort and Economic Developments of NATO Countries". The memorandum employs its own exchange rate conversion method to compare national defense expenditures. The NATO international staff is constantly working on the problem of developing better methodology to improve its price deflators. This will lead eventually to the development of an agreed PPP system for defense comparisons. In the meantime, NATO makes its comparisons using the best available data, plus other consistent sources, in its annual International Staff Memorandum.

THE EFFECTS OF INFLATION ON DEFENSE SPENDING MEASUREMENT

The technique for handling the complex problem of measuring the effects of inflation on defense spending comparisons has become a subsience of its own. The system used in NATO makes use of a calculated deflator which makes possible comparisons among several countries with differing exchange rates. Deflators can be computed in different ways and several methods have been developed in attempts to draw valid comparisons and conclusions about the defense budgets of NATO countries and Japan. None of these is flawless. Nevertheless, the deflator system is the best tool we have devised up to now to enable quick comparisons to be drawn. Though it is widely used, its methodology is constantly being refined. The deflator allows the most accurate comparisons to be made between the prices and budget outlays of one country with those of another, allowing for each country's rate of inflation.

Inflation can have an important impact on the public's perception of defense spending. While budget outlays in actual amounts continue to increase, the goods and services these amounts buy do not increase at the same rate because of inflation. This is a difficult idea to convey to national electorates who, even if they understand the reasoning behind it, are themselves caught in the squeeze of inflation. In inflationary times, there is strong competition among conflicting interests and programs for budgetary resources. When popular social programs are threatened and inflation adds new burdens to those who are caring for the young, old, sick and incapacitated, increase in military spending are not politically popular. The effects of inflation on a nation's will to spend scarce resources on defense can be very strong. All NATO countries have had problems with this in the last few years.

GENERAL ECONOMIC IMPACT OF DEFENSE EFFORTS

While all NATO countries have common political and defense goals which they try to attain through membership in the Alliance, it is evident that they differ greatly from one another, particularly in economic strength. For example, Iceland has 240,000 inhabitants and the US 240,000,000. Canada has six persons per square mile and The Netherlands has 900. Providing space for military use, including bases, is more difficult and represents a greater economic sacrifice where space is limited. Gross

Domestic Product (GDP) also varies widely from \$3 billion in Iceland and Luxembourg to \$3,635 billion in the United States. The GDP of the United States represents about 57 percent of the Alliance total while Germany's is about 10 percent. GDP variations are largely influenced by the degree of a nation's economic developments. For instance, the United States' per capita GDP is \$15,356 compared to Turkey's \$1,023. NATO has always supported the concept that countries whose economic strength is greatest should assume a greater burden of devoting a larger portion of their GDP to defense. This is similar to the principle of progressive taxation which most NATO countries apply to share the internal cost of government and public services. Therefore, those with higher incomes should be prepared to contribute not only a greater amount in absolute terms but also a greater proportion of their incomes. In some cases, therefore, civilian consumption and investment must be restrained to meet the needs of the Atlantic Community. These limitations should be less onerous for the economically less developed members.

Some of the European members of the Alliance believe that the division between defense and other public expenditures which contribute to security is somewhat arbitrary. Certainly, payments for social purposes, education, investment in economic growth, assistance to developing countries, maintaining free access to Berlin, etc., complement military outlays in that they contribute to political cohesion and aid in resisting internal and external threats. Any other definition of the defense effort would also be open to the charge of being arbitrary as well. While some civilian expenditures also strengthen the defense position of member countries it is equally true that military outlays, particularly infrastructure projects, also benefit the civilian economy. The feeling of security which is the product of defense efforts is a necessary prerequisite to prosperity and internal calm and contributes to development and prosperity.

BALANCE OF PAYMENTS

For some countries foreign exchange difficulties have indeed been one of the main obstacles encountered in the defense effort. However, in the case of fairly advanced countries, it is not normally an obstacle of a structural nature, as are the obstacles met by developing countries. In this respect, looking only at the military transactions affecting the foreign exchange position would be misleading; indeed, a relatively large deficit on such transactions may be easily financed by countries whose general balance of payments is positive, or who have accumulated abundant gold and foreign exchange reserves, while even a small deficit on military transactions may seriously add to the balance of payments difficulties experienced by other countries. In short, the problem of the impact of the defense effort on the foreign exchange position of a country has to be examined in the context of its overall external finances, i.e., taking account of the strength of its balance of payments and of its gold and foreign exchange reserves.

ECONOMIC DEVELOPMENT

The NATO Alliance has several members (and sub-national regions) which are underdeveloped. The stability of these nations is, to a greater or lesser extent, dependent on their continued development, and thus this development will to some extent determine their roles in the Alliance in future years.

INDUSTRIAL IMPACT

Over the years, many programs have been established for the cooperative development and production of NATO weapons. The methods employed have been coproduction, dual-production and the families of weapons concepts. These programs all involve the sharing of development and production costs and have produced large savings in R&D expenditures to individual nations. They are the primary avenue of technology transfer among the nations of the Alliance. Weapons program transfers operate in both directions. For example, the US has bought the MAG-58 machine gun and the 120mm tank gun from Europe, and European manufacturers have fabricated the F-16 airframe and components.

In defense equipment trade, the balance is still well in the United States' favor. In dollar terms we sell approximately 2.9 times more equipment to Europe than it buys from us. This is partly explained by the preponderance of "big ticket" items, e.g., fighter aircraft we sell to Europe. We are seeking opportunities to develop more of a two-way street in defense trade with our allies.

CONTRIBUTION OF STATIONED FORCES TO HOST NATION ECONOMY

A tangible benefit to nations where NATO troops are stationed is the hard currency contributions, both official and personal, which go along with the maintenance of large standing forces. Housing, food supplies and energy are a few of the major expenditures which are largely bought from the host country. Support services and administration are also largely staffed by nationals of the host country, making military bases important employers in several nations. In the forty years since the end of WW II, the economies of numbers of communities in Western Europe have become tightly linked to the spending patterns of local base administrations. Local economies also benefit from base-related priorities for internal redistribution -- where national governments spend important sums locally in support of facilities on their own soil. While this does not add to the total income of the nations, it has important local effects.

WEST BERLIN

Germany makes substantial outlays for the defense of West Berlin which include the support of their allied garrisons (US, UK and France). There are also programs funded by West Germany designed to promote the political and economic stability of the city. Because of several wartime and postwar agreements, West Berlin expenditures, even for the military

garrisons, cannot be included as defense expenditures in NATO tallies. Yet, it is Alliance doctrine that the defense of West Berlin is a NATO commitment. If the funds West Germany spends in West Berlin (over \$5.4 billion per annum) were included in her NATO total, her officially documented Alliance burdensharing level would go up substantially. The city of Berlin remains of great psychological value to Germans on both sides of the border, while the NATO commitment to its defense is a visible measure of NATO's resolve in Central Europe.

AID TO DEVELOPING COUNTRIES

Official aid to developing countries is sometimes cited as part of a nation's overall defense burden. In addition to military assistance, which is included in NATO's definition of defense expenditure, most industrialized NATO countries extend various types and amounts of developmental assistance to developing countries. While these expenditures do not add directly to NATO's defense capability, they do in general contribute to Free World peace and stability and they do constitute a financial burden on the donor's economy. The proportion of putative economic aid actually assignable to defense-related purpose can only be estimated on a case-by-case basis. There is so much variation in the objectives and recipients of aid that direct comparisons between donor countries are very hard to make.

Further, defining "aid" is extremely difficult and can be misleading. Exemptions from tariff and non-tariff barriers, monetary and non-monetary preferences, standards and codes and a variety of preferential commercial arrangements all influence the amounts of assistance provided in real terms. Statistical problems abound. Chart B-1 is an attempt to reconcile as many of the problems as possible.

CHART B-1

NET OFFICIAL DEVELOPMENTAL ASSISTANCE AS PERCENT OF GDP

	Percentages				\$ Millions			
	1981	1982	1983	1984	1981	1982	1983	1984
Belgium	.59	.59	.59	.56	575	501	480	434
Canada	.43	.41	.45	.50	1189	1197	1429	1624
Denmark	.73	.76	.73	.85	403	415	395	448
France	.73	.75	.74	.77	4177	4028	3815	3788
Germany	.47	.48	.49	.45	3182	3163	3176	2782
Italy	.19	.24	.24	.32	665	812	827	1105
Japan	.28	.28	.33	.35	3171	3023	3761	4318
Netherlands	1.08	1.08	.91	1.02	1510	1474	1195	1267
Norway	.85	1.03	1.06	.99	467	559	584	542
United Kingdom	.43	.37	.35	.33	2191	1793	1605	1418
United States	.20	.27	.24	.24	5782	8202	8081	8711
Non IIS NATO	.52	.52	.52	.53	14,359	13,942	13,506	13,408
NATO	.36	.38	.38	.36	20,141	22,144	21,587	22,119
Total	.35	.37	.37	.36	23,312	25,167	25,348	26,437

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